



Technical Manual

STEREO CONTROL AMPLIFIER RC-1090-1

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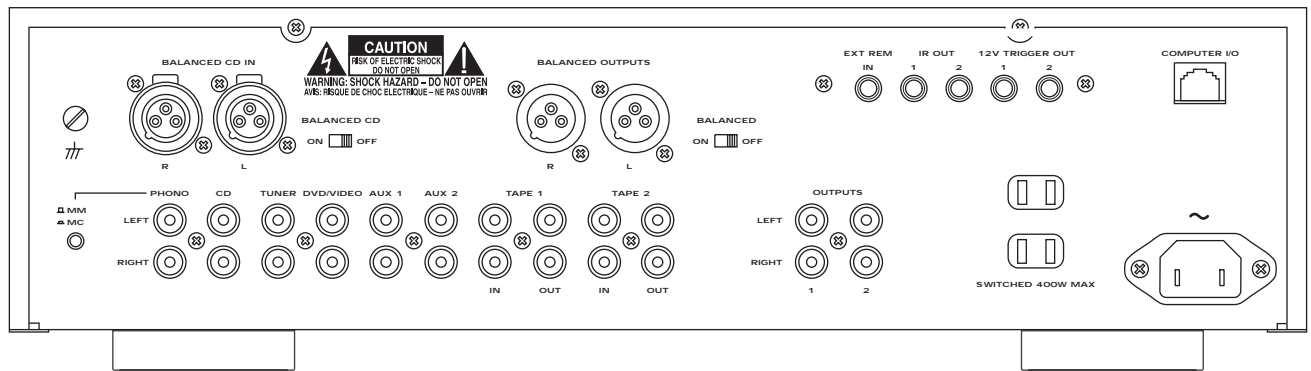
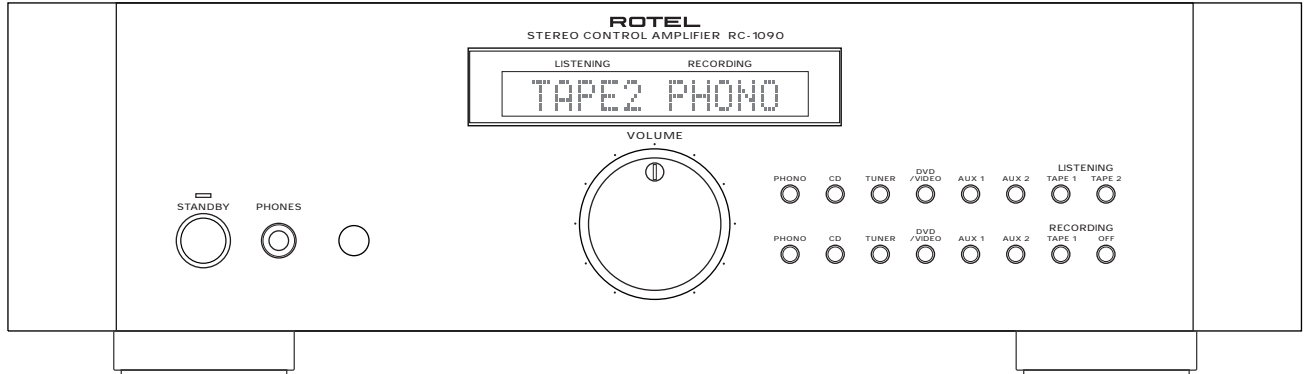
Specification

Total Harmonic Distortion (20 Hz - 20 kHz 8 ohms)	<0.004 %
Intermodulation Distortion (60 Hz : 7 kHz 4 : 1)	<0.004 % at 1V output
Input Sensitivity / Impedance	
Phono - MC	0.25 mV / 100 ohms
Phono - MM	2.5 mV / 47 kohms
Line Level	150 mV / 18 kohms
Phono Overload (MC/MM)	16 mV / 160 mV
Output Level / Impedance	1 V / 100 ohms
Frequency Response	
Phono Input	20 Hz - 20 kHz, ± 0.2 dB
line Level Input	4 Hz - 100 kHz, ± 0.5 dB
Signal to Noise Ratio (IHF "A" weighted)	
Phono - MC / MM	70 dB / 75 dB
Line Level	100 dB
Power Requirements	
USA Version	115 volts, 60 Hz
European Version	230 volts, 50 Hz
Power Consumption	13 Watts
Dimensions (W x H x D)	430 x 125 x 345 mm 1615/16 x 415/16 x 1319/32"
Weight (net)	7.8 kg/17.2 lb.

THE ROTEL CO., LTD

SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,
TOKYO 150-0045, JAPAN

Serial. NO. Beginning



SYMBOL	PARTS NO.	DESCRIPTION
	016 X-1299F01-05 PCB ASSY	
	501 X-1299	PCB ASSY
H1,H2,H3,H4	017 C-4401A01	SUB HEAT SINKER H=25 1025
Q501/503,502/504,505/507,506/508	019 C-4334A04	TRANSISTOR CAP
H1,H2,H3,H4	019 TO-126	MICA SHEET TBM-51W-15 #9524
IC704	031 LB1641	IC (MOTOR DRIVE)
IC542	031 LC4966	IC (LOGIC SWITCH)
IC403,404	031 NE5534AN-S	IC (SELECTED OPE AMP)
IC601	031 NJM4556AD	IC (OPE DUAL)
IC901	031 NJM7805FA	IC (REG. +5VDC) KIA7805API-U
IC902	031 NJM7815FA	IC (REGULATOR +15VDC)
IC903	031 NJM7915FA	IC (REGULATOR -15VDC)
IC502,503	031 OPA134PA	IC (OPE AMP SINGLE)
IC501	031 OPA2134PA	IC (OPE DUAL)
IC703	031 TC74HC595AP	IC (8BIT SHIFT REGISTER/LATCH)
IC451	031 TC9163AN	IC (SWITCH ALLEY)
IC401,402	031 TL071CP	IC (OPE AMP SINGLE)
Q401-404	032 D786-RS	TRANSISTOR 2SD786-RS
Q451-458,468	032 TA1345	TRANSISTOR 2SA1345AC
Q527,528	032 TA608-FG	TRANSISTOR 2SA608KAA-FG
Q460-467,470	032 TC3399	TRANSISTOR 2SC3399AC
Q525,526,529,530,903	032 TC536-FG	TRANSISTOR 2SC536KAA-FG
Q904	032 TD863-EF	TRANSISTOR 2SD863AE-EF
Q519,520	033 A1209-ST	TRANSISTOR 2SA1209-ST
Q409,410,521,522	033 B631-EF	TRANSISTOR 2SB631K-EF
Q517,518	033 C2911-ST	TRANSISTOR 2SC2911-ST
Q407,408,523,524	033 D600-EF	TRANSISTOR 2SD600K-EF
Q505-512,902	033 TA1016-FG	TRANSISTOR 2SA1016KAA-FG
Q905	033 TA1450-ST	TRANSISTOR 2SA1450AA-ST
Q405,406,501-504,513-516	033 TC2362-FG	TRANSISTOR 2SC2362KAA-FG
Q901,906	033 TC3708-ST	TRANSISTOR 2SC3708AA-ST
D901,902	034 BR84	BRIDGE POWER DIODE 8A 400V
D511-514	034 E-562	CURRENT REGULATIVE DIODE 5.6mA
D509,510	034 MA27W-A	VARISTOR DIODE
D401-404,441-448,501-508,541	034 T1N4148-86	DIODE 1N4148TAP-50
D601,602,707,904,905,907	034 T1N4148-86	DIODE 1N4148TAP-50
D911	034 TRD12JST1	ZENER DIODE 12V (AB2)
D908,912	034 TRD16JST1	ZENER DIODE 16V (AB2)
D405,406	034 TRD18JST1	ZENER DIODE 18V (AB2)
D909	034 TRD30JST1	ZENER DIODE 30V (AB2)
D906	034 TRD4.7JST1	ZENER DIODE 4.7V (AB2)
D713	034 TRD5.6JST1	ZENER DIODE 5.6V (AB2)
D910	034 TRD9.1JST1	ZENER DIODE 9.1V (AB2)
D903	034 W02M	BRIDGE POWER DIODE 1.5A 200V
F901	036 5ST2.5	FUSE 250VT2.5A
C501,502,507,508,517,518	041 25BGF47M	ELECTROLYTIC CAPACITOR 25V47uF
C509-512	041 35BGF100M	ELECTROLYTIC CAPACITOR 35V100uF
C513-516,918,919	041 35BGF470M	ELECTROLYTIC CAPACITOR 35V470uF
C505,506	041 50BGF010M	ELECTROLYTIC CAPACITOR 50V1uF
C901-904	041 ALN20S1078DD	ELECTROLYTIC CAPACITOR 63V4700uF
C421-424	041 TEEUFC1E471B	ELECTROLYTIC CAPACITOR 25V470uF
C413-420,519-524	041 TEEUFC1E1015B	ELECTROLYTIC CAPACITOR 25V100uF
C409,410,425,426	041 TEEUFC1H100LB	ELECTROLYTIC CAPACITOR 50V10uF
C912	041 TUTES1A101-TF	ELECTROLYTIC CAPACITOR 10V100uF
C451,452,607,608,916,917	041 TUTES1E101-TF	ELECTROLYTIC CAPACITOR 25V100uF
C720	041 TUTES1E470-TF	ELECTROLYTIC CAPACITOR 25V47uF
C910	041 TUTES1H010-TF	ELECTROLYTIC CAPACITOR 50V1uF
C461-468	041 TUTES1H100-TF	ELECTROLYTIC CAPACITOR 50V10uF
C913	041 TUTES1H470-TF	ELECTROLYTIC CAPACITOR 50V47uF

Parts List 2/4

RC-1090

SYMBOL	PARTS NO.	DESCRIPTION
C601,602	041 TUTES1H4R7-TF	ELECTROLYTIC CAPACITOR 50V4.7uF
C908,909,911	041 TUTES1V101-TF	ELECTROLYTIC CAPACITOR 35V100uF
C915	041 TUTES1V102-TS	ELECTROLYTIC CAPACITOR 35V1000uF
C605,606	042 TP50V103J	MYLAR CAPACITOR UMX-TF 0.01uF
C905-907,914,923-930	043 TC500V103	CERAMIC CAPACITOR 500V0.01uF
C703-705	043 TC50V103	CERAMIC CAPACITOR 0.01uF
C427	043 TC50V473	CERAMIC CAPACITOR 0.047uF
C405,406	044 FSC160V101H	POLYSTYLENE CAPACITOR 160V100pF
C403,404	044 FSC160V331H	POLYSTYLENE CAPACITOR 160V330pF
C411,412	044 PP160V6800PF	POLYPROPYLENE CAPACITOR 2222 461-46802
C603,604	044 S50V47PJ	STYROL CAPACITOR 50V47PF(J)
C401,402,503,504	044 TFKP2-2A101H	P.P CAPACITOR FKP2-100V101H
C407,408	044 TFKP2-2A102F	P.P CAPACITOR FKP2-100V102F
VR501	051 C-4170A33	DETENT VARIABLE RESISTOR 50KAX2 with MOTOR
R721	053 CR14-103J-A	CARBON RESISTOR 1/4W 10K
R474,557,916	053 CR14-104J-A	CARBON RESISTOR 1/4W 100K
R907	053 CR14-153J-A	CARBON RESISTOR 1/4W 15K
R911,912,913	053 CR14-223J-A	CARBON RESISTOR 1/4W 22K
R918	053 CR14-272J-A	CARBON RESISTOR 1/4W 2.7K
R558	053 CR14-331J-A	CARBON RESISTOR 1/4W 330
R471,472	053 CR14-470J-A	CARBON RESISTOR 1/4W 47
R908	053 CR14-472J-A	CARBON RESISTOR 1/4W 4.7K
R910	053 CR14-473J-A	CARBON RESISTOR 1/4W 47K
R476	053 CR14-474J-A	CARBON RESISTOR 1/4W 470K
R477	053 CR14-561J-A	CARBON RESISTOR 1/4W 560
R909	053 CR14-682J-A	CARBON RESISTOR 1/4W 6.8K
R612	053 CR14-821J-A	CARBON RESISTOR 1/4W 820
R716	053 CR16-100J-A	CARBON RESISTOR 1/6W 10
R930	053 CR16-103J-A	CARBON RESISTOR 1/6W 10K
R717	053 CR16-104J-A	CARBON RESISTOR 1/6W 100K
R928,929	053 CR16-2R2J-A	CARBON RESISTOR 1/6W 2.2
R903	054 1WS120JF	MOF RESISTOR 1W 120
R902,919	054 1WS180JF	MOF RESISTOR 1W 180
R611,904	054 1WS330JF	MOF RESISTOR 1W 330
R917	054 1WS68JF	MOF RESISTOR 1W 68
R905,906	054 2WS100JF	MOF RESISTOR 2W 100
R901,927	054 ERQ12AJ2R2P	FUSIBLE RESISTOR 1/2W 2.2
R451-464,467-470	054 TMF16-1001	METAL FILM RESISTOR 1/6W 1K
R415,416	054 TMF4700	METAL FILM RESISTOR 1/4W 470
R465,466,555,556	054 TMFR4001K	STANDARD METAL RESISTOR 1/4W 1K
R537-540,551-554	054 TMFR4010K	STANDARD METAL RESISTOR 1/4W 10K
R529-532	054 TMFR4010R	STANDARD METAL RESISTOR 1/4W 10
R527,528	054 TMFR4018K	STANDARD METAL RESISTOR 1/4W 18K
R505-512	054 TMFR401K2	STANDARD METAL RESISTOR 1/4W 1.2K
R435,436,920,921	054 TMFR401K5	STANDARD METAL RESISTOR 1/4W 1.5K
R417,418,517,518,547-550	054 TMFR4022K	STANDARD METAL RESISTOR 1/4W 22K
R421,422	054 TMFR402K7	STANDARD METAL RESISTOR 1/4W 2.7K
R605,606	054 TMFR4033K	STANDARD METAL RESISTOR 1/4W 33K
R525,526	054 TMFR403K3	STANDARD METAL RESISTOR 1/4W 3.3K
R433,434,535,536,545,546,609,610	054 TMFR4047K	STANDARD METAL RESISTOR 1/4W 47K
R409,410	054 TMFR4047R	STANDARD METAL RESISTOR 1/4W 47
R425,426	054 TMFR404K7	STANDARD METAL RESISTOR 1/4W 4.7K
R411-414	054 TMFR405K6	STANDARD METAL RESISTOR 1/4W 5.6K
R423,424	054 TMFR4075K	STANDARD METAL RESISTOR 1/4W 75K
R431,432,601,602	054 TMFR4100K	STANDARD METAL RESISTOR 1/4W 100K
R429,430,533,534,541-544	054 TMFR4100R	STANDARD METAL RESISTOR 1/4W 100
R607,608	054 TMFR4150R	STANDARD METAL RESISTOR 1/4W 150
R523,524	054 TMFR4220R	STANDARD METAL RESISTOR 1/4W 220
R419,420,513-516	054 TMFR4270R	STANDARD METAL RESISTOR 1/4W 270
R603,604	054 TMFR4330K	STANDARD METAL RESISTOR 1/4W 330K

SYMBOL	PARTS NO.	DESCRIPTION
R427,428	054 TMFR4470K	STANDARD METAL RESISTOR 1/4W 470K
R519-522	054 TMFR4470R	STANDARD METAL RESISTOR 1/4W 470
R407,408,559,560	054 TMFR4560R	STANDARD METAL RESISTOR 1/4W 560
R403,404,501,502	054 TRC55C1000F	METAL RESISTOR 100
R405,406	054 TRC55C10R0F	METAL RESISTOR 10
R503,504	054 TRC55C3902F	METAL RESISTOR 39K
R401,402	054 TRC55C4702F	METAL RESISTOR 47K
S901	061 4TR-2947	PUSH SWITCH SPUN12 (STANDBY)
S401	061 4TR-3301	PUSH SWITCH SPUJ19 (MM / MC)
RY451-458,501,601,602	063 A24W-K	RELAY A24W-K
RY902	063 DG1U-24	RELAY DG24D1-O(M)-2
RY901	063 DH2U-24	RELAY DH24D2-O(M)
S501,502	064 4TR-2341	SLIDE SWITCH SSSU122 (BALANCED CD)
PJ1-PJ6	066 4TR-2672#3	4P PIN JACK AU (WHT.RED)
DJ1,DJ2	066 C-4516B01	3P CANNON SOCKET(MALE) YKF52-5004N
DJ3,DJ4	066 C-4575B01	3P CANNON JACK(FEMALE) YKF52-5006N
D002	068 B2B-EH	CONNECTOR WAFER 2P
JP5B,JP6B,JP7B,JP8A,JP9A,JP12A	068 B3B-EH	CONNECTOR WAFER 3P
JP1B,JP2B,JP10B,JP15A	068 B4B-EH	CONNECTOR WAFER 4P
JP11B	068 B6B-EH	CONNECTOR WAFER 6P
JP3B	068 B8B-EH	CONNECTOR WAFER 8P
CON5	068 C-3683#1	PCB TERMINAL 2P P7.5 TP WE-11 I-752NA
CON4,CON6	068 C-3683#2	PCB TERMINAL 3P P7.5 TP WE-12 I-753NA
CON3	068 C-3683#3	PCB TERMINAL 4P P7.5 TP WE-13 I-754NA
D001	068 C-3963#21	LED WIRE 200mm (BRN/BLK)
CON2	068 C-4422A01	PCB TERMINAL 2P P=10
K1A,K2A	068 TD04LG	4P CONNECTOR WAFER
J115	069 4TR-2368B	JUMPER PLATE 20mm
AC01	069 C-4372A01	AC OUTLET CCT1304-0211 (120V only)
GND	069 C-4484A00	EARTH LUG
	016 E-1355A00 PCB ASSY	
	501 E-1355-C	PCB ASSY
HJ1	065 H2098S050S	HEAD PHONE JACK 6.5F 9P (YKB26-5078)
JP0	068 B5B-EH	CONNECTOR WAFER 5P
	016 X-1300C01-04 PCB ASSY	
	501 X-1300	PCB ASSY
	014 C-4462A05	FILTER BOARD 28X115
	014 DB-151	ORNAMENTAL CHASSIS
X701	023 CST10.0MTW	CERAMIC RESONATOR
IC701	031 CXP82832-311Q	IC SMD (CPU)
IC702	031 HIN232CP	IC (TRANSMITTER RECEIVER)
IC904	031 PC817X2	IC (PHOTO COUPLER)
IC705	031 SBX3010-52B	IC (REMOTE EYE)
Q701,907	032 TC536-FG	TRANSISTOR 2SC536KAA-FG
D701-706,708,714,914	034 T1N4148-86	DIODE 1N4148TAP-50
D709-712	034 TRD12JST1	ZENER DIODE 12V (AB2)
FL701	035 SVR-12MM18	FL TUBE
C708	041 FYD0H224Z	BACK-UP CAPACITOR 5.5V0.22F
C722	041 TUTES1A101-TF	ELECTROLYTIC CAPACITOR 10V100uF
C707	041 TUTES1E470-TF	ELECTROLYTIC CAPACITOR 25V47uF
C713-717	041 TUTES1H010-TF	ELECTROLYTIC CAPACITOR 50V1uF
C718	041 TUTES1H100-TF	ELECTROLYTIC CAPACITOR 50V10uF
C719	041 TUTES1HR22-TF	ELECTROLYTIC CAPACITOR 50V0.22uF
C709-712,721	043 TC50V101	CERAMIC CAPACITOR 50V100pF
C701,702	043 TC50V473	CERAMIC CAPACITOR 50V0.047uF
C706	044 50MSAN104J	STACKED FILM CAPACITOR 50V0.1uF
R924,925	053 CR16-100J-A	CARBON RESISTOR 1/6W 10R
R701,702,926	053 CR16-101J-A	CARBON RESISTOR 1/6W 100R
R703-707,718,922,923	053 CR16-102J-A	CARBON RESISTOR 1/6W 1K

SYMBOL	PARTS NO.	DESCRIPTION
R915	053 CR16-103J-A	CARBON RESISTOR 1/6W 10K
R715	053 CR16-104J-A	CARBON RESISTOR 1/6W 100K
R914	053 CR16-332J-A	CARBON RESISTOR 1/6W 3.3K
R714	053 CR16-472J-A	CARBON RESISTOR 1/6W 4.7K
R709-713,720	053 CR16-473J-A	CARBON RESISTOR 1/6W 47K
R719	054 SE4473J	THICK FILM RS NETWORK 47K
S701-708,711-718	061 C-4679A03	TACT SWITCH 5mm GRY HV061050GS
HJ901-HJ905	065 YKB21-5103A	3.5Φ MINIATURE JACK (ST)
SKT1	066 SY010-8P/K	RJ45 TERMINAL (8P)
JP14B	068 B2B-EH	CONNECTOR WAFER 2P
JP13B	068 B3B-EH	CONNECTOR WAFER 3P
JP4A	068 B5B-PH-KS	CONNECTOR WAFER 5P
OTHERS		
	011 FP-533-B	SUB PANEL ASSY (BLACK)
	011 FP-533-S	SUB PANEL ASSY (SILVER)
	011 TH3-01B00	H/S PANEL
	012 C-4711A01	KNOB 43Φ W/LED (BLACK)
	012 C-4711A01S	KNOB 43Φ W/LED (SILVER)
	012 RV4-09A00	PUSH BUTTON 14Φ (BLACK)
	012 RV4-09A01	PUSH BUTTON 14Φ (SILVER)
	012 TB3-18A00	TACT BUTTON 16 KEY (BLACK)
	012 TB3-18A01	TACT BUTTON 16 KEY (SILVER)
	014 C-4723B02	UPPER COVER
	015 RP-384B	REAR CHASSIS
	015 TH3-03C00	FRONT CHASSIS
	019 C-4714A00	POWER KNOB RING 14Φ (BLACK)
	019 C-4714A01	POWER KNOB RING 14Φ (SILVER)
	019 C-670#18	FELT 56Φ
	019 PK4-07A00T	METAL FOOT 60Φ
T001	022 T-1083T03 (or 01)	POWER TRANSFORMER
	034 SEL1124R	LED (RED) 1X5
	034 SEL1E24W	LED (BLU) 1X5
	069 C-4629A01	AC 2P INLET 6102.3100 (WIRING)
	072 C-4621A03	AC CORD SET SJT AWG16 for USA
	072 C-4622A02	AC CORD SET for AUSTRALIA
	072 C-4623A02	AC CORD SET for U.K.
	072 C-4624A03	AC CORD SET for EUROPE
	081 TH3-11B00	INSIDE CARTON
	081 TH3-12B00	SHIPPING CARTON
	081 Z-204	STYROL MOULDING
	082 OMRC-1090-1	OWNER'S MANUAL (EFGISD)
	092 RR-1050	REMOTE CONTROL UNIT

Addendum List for Black and Silver

RC1090

SYMBOL	PARTS	DESCRIPTION
①	011 FP-533-B	BLACK PANEL ASSY
②	011 FP-533-S	SILVER PANEL ASSY
③	011 TH3-01B00	H/S PANEL H109
	012 C-4711A01	KNOB 43F (BLK)
	012 C-4711A01S	KNOB 43F (SLV)
	012 RV4-09A00	PUSH BUTTON 14F (BLK)
	012 RV4-09A01	PUSH BUTTON 14F (SLV)
	012 TB3-18A00	TACT BUTTON 16 KEY (BLK)
	012 TB3-18A01	TACT BUTTON 16 KEY (SLV)
	034 SEL1124R	LED (RED) 1X5
	034 SEL1E24W	LED (BLU) 1X5

Panel Assy is included:

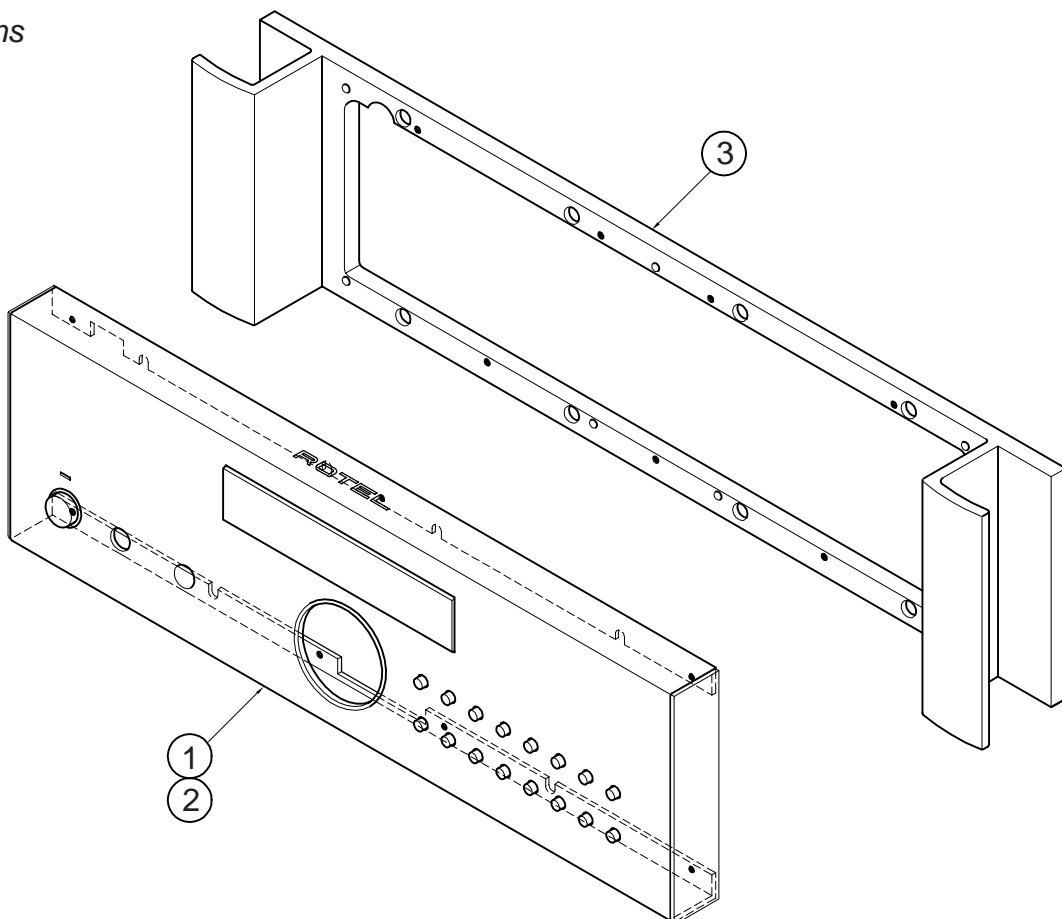
Panel Window

Side Cap

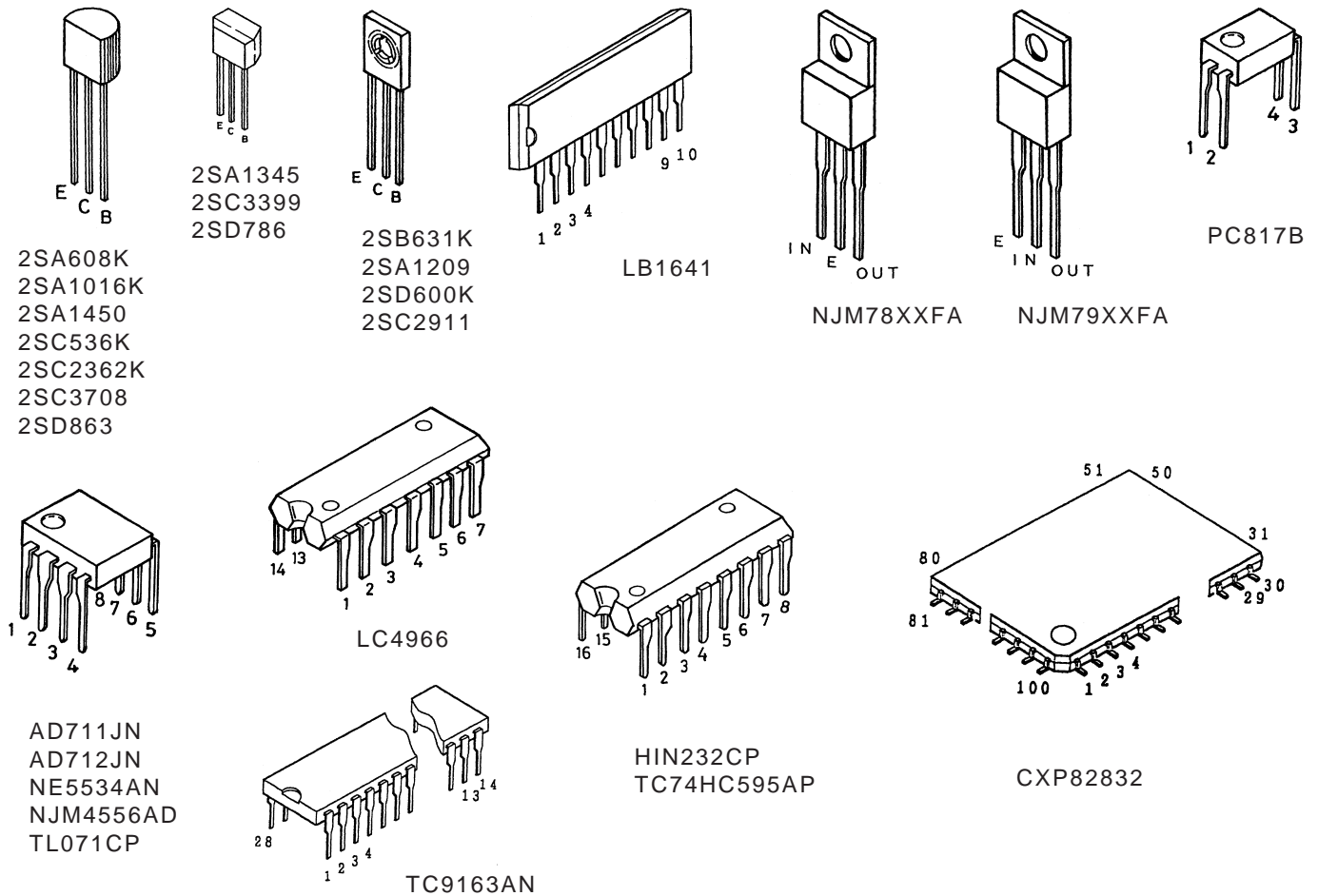
Knob Ring

Tact buttons

LED



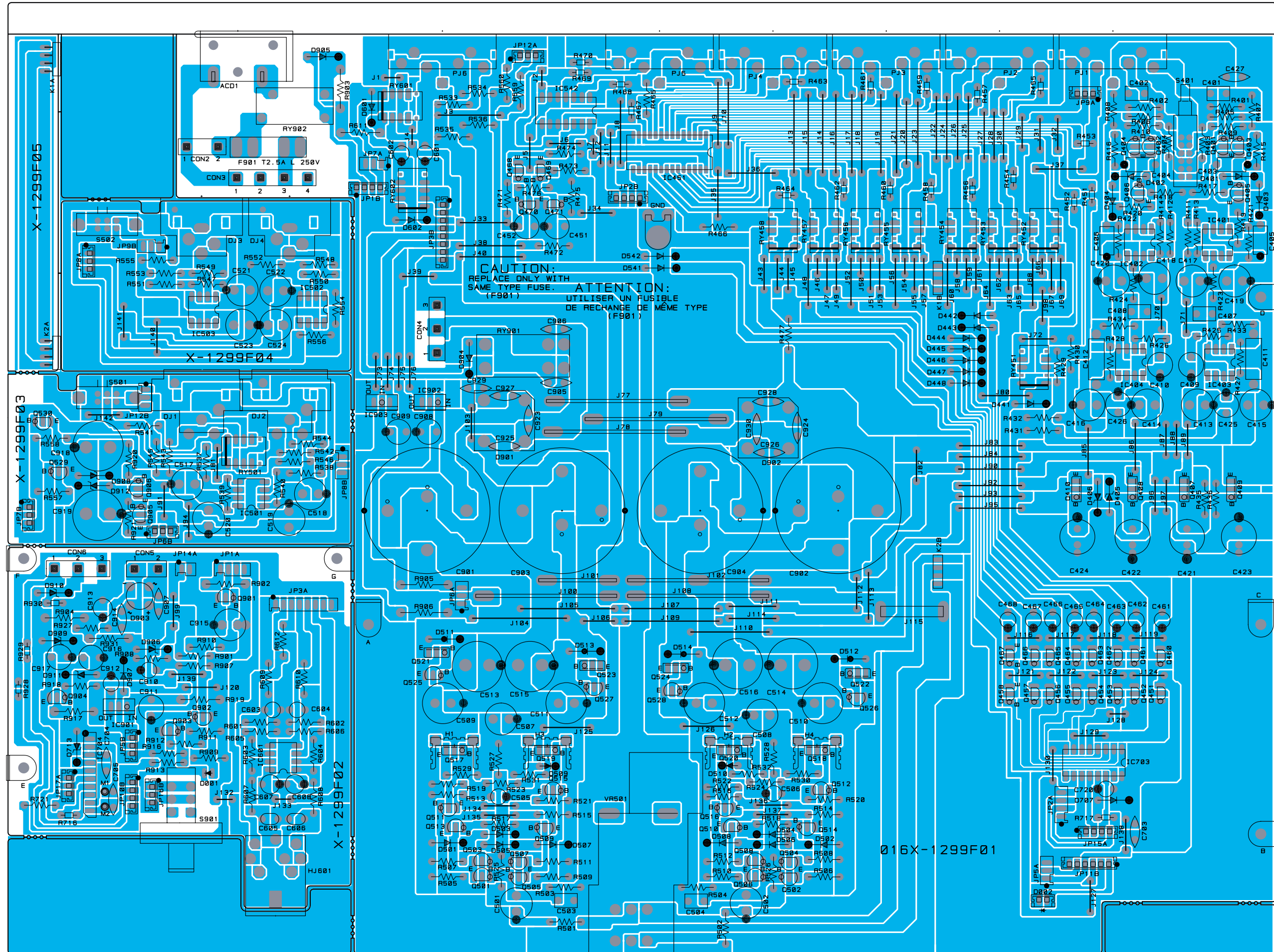
Case Outlines



Safety Caution

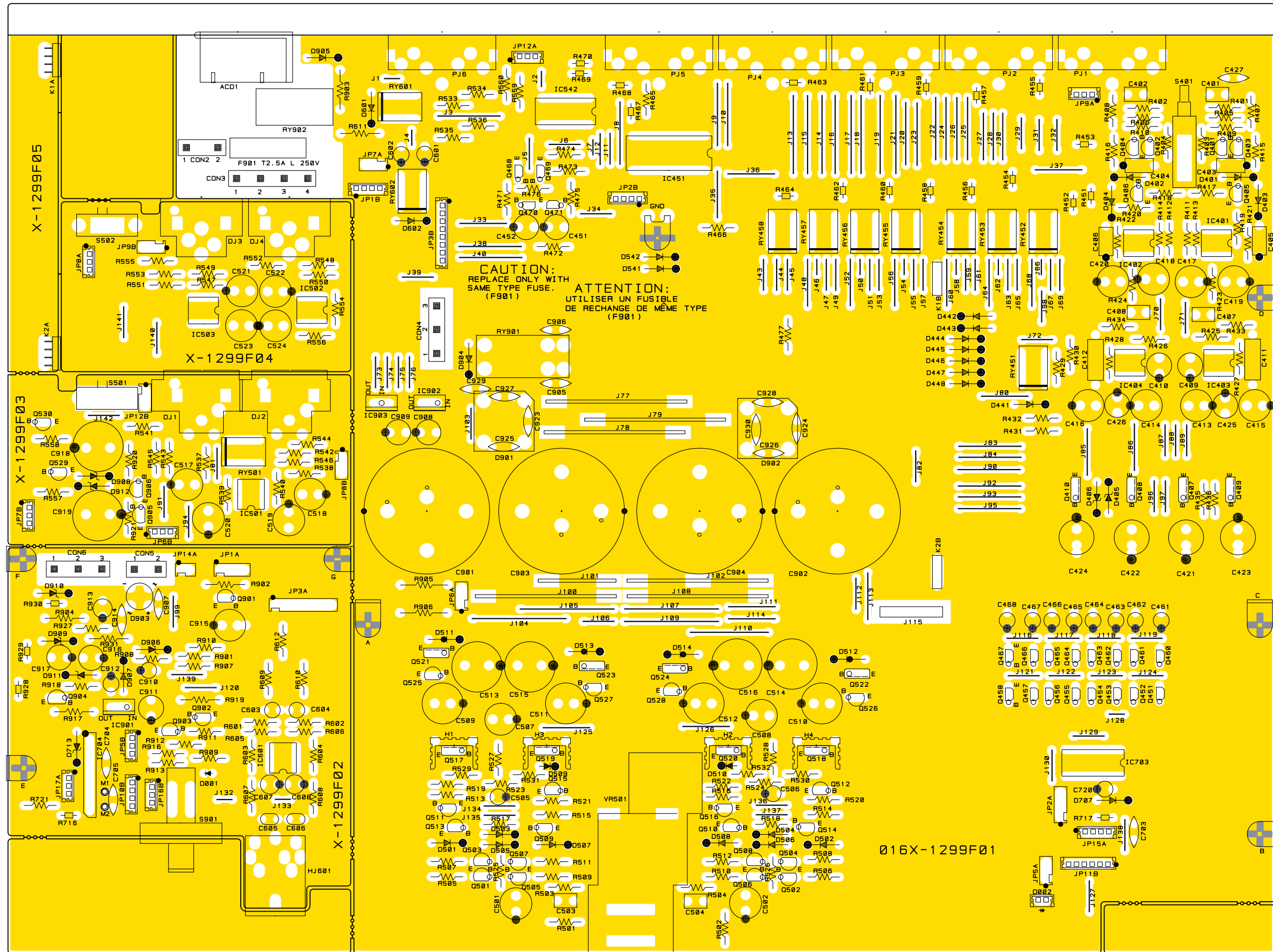
Cautions during Inspection and Repair

1. Keep in mind the safety warnings
 The safety instructions are shown as the labels or printings on the exterior, the inside chassis or the parts, etc. Refer to the instructions when proceeding with inspection or repair.
2. Use only the specified parts for replacement
 The selected parts are used at critical area to reduce fire hazard or electrical shock. So when replacing these parts where designaged with **⚠ marks or ✖ marks on the schematic diagram or the parts list**, ensure to use only the same parts.
3. Ensure to dress back the AC (Mains) cord to the original position
 If for some reason, the AC cord is moved or partially disassembled, ensure to re-route or assemble back to the original position. The AC cord area is protected and secured by tubing and insulation materials for the sake of safety, so that no loose wire will touch and cause fire hazard and electrical shock.
4. Check for safety aspects after inspection or repair
 Ensure all parts, such as screws or wires, removed during inspection or repair are secured back to the original positions, and check visually for any anomaly. Also check for any electrical leakage or resistance to maintain the safety.



Main PCB (2/2) Top Pattern

016 X-1299F01 - 05

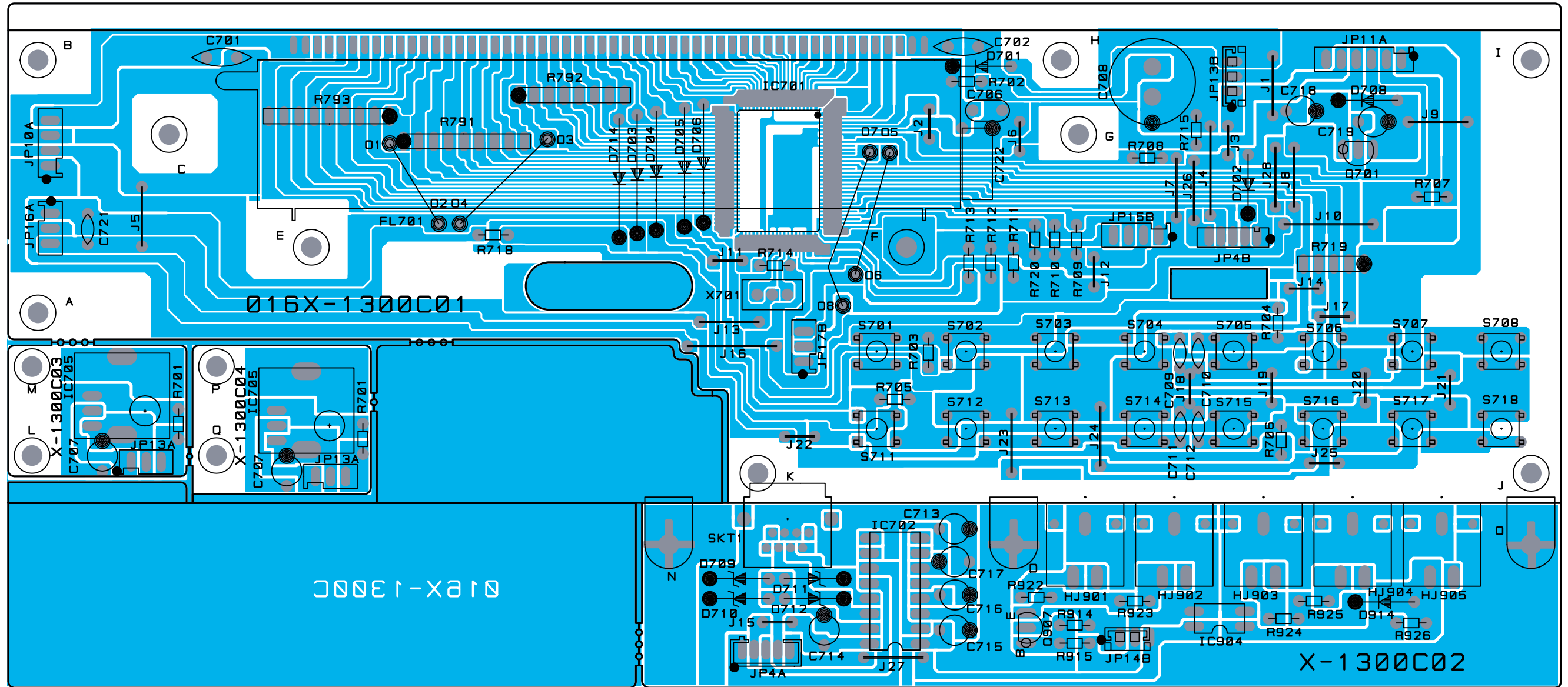


CAUTION:
REPLACE ONLY WITH
SAME TYPE FUSE.
(F901)

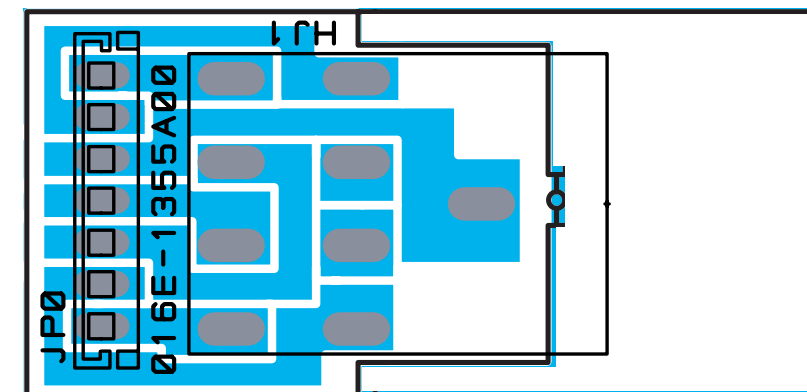
ATTENTION:
UTILISER UN FUSIBLE
DE RECHANGE DE MEME TYPE
(F901)

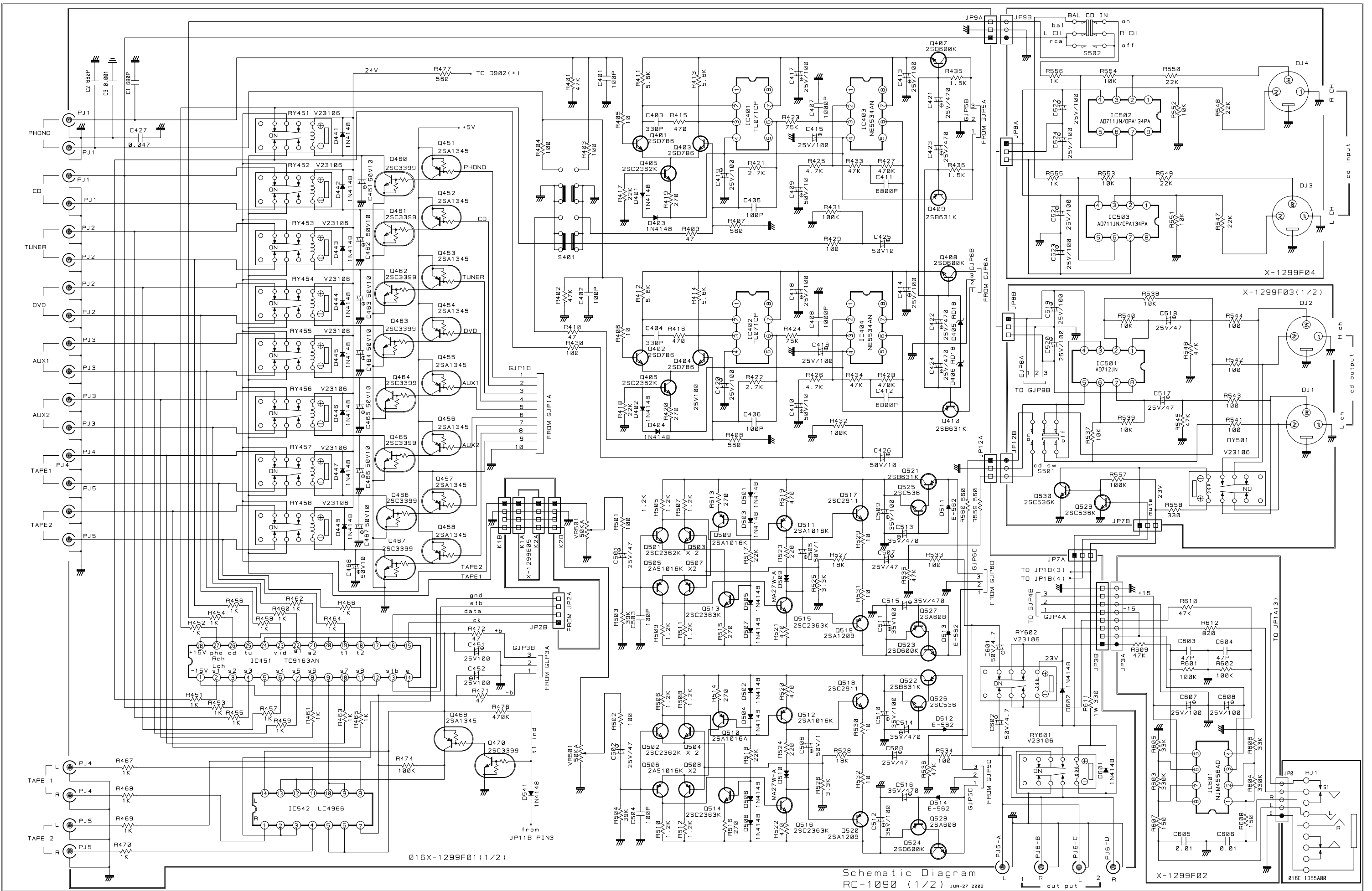
016X-1299F01

016 X-1300C01 - 04



Head Phone PCB
016 E-1355A00



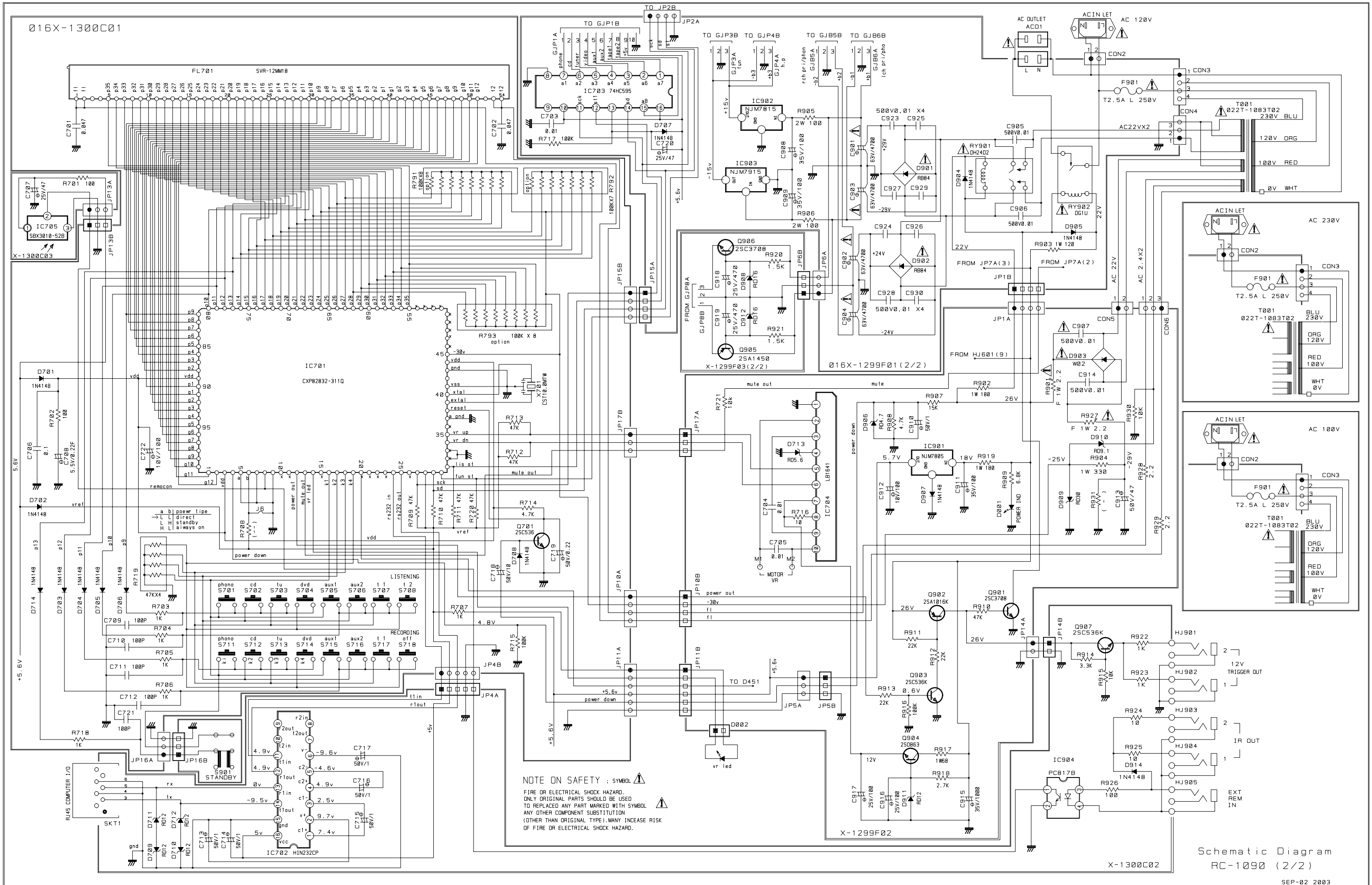


Schematic Diagram RC-1090 (1/2) JUN-27 2002

016X-1299F01 (1/2)

X-1299F02

016E-1355A08



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) MANY INCREASE RISK
 OF FIRE OR ELECTRICAL SHOCK HAZARD.

Schematic Diagram
 RC-1090 (2/2)