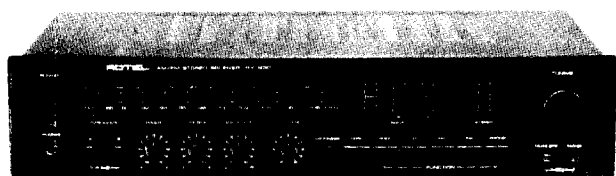


Quality Uncompromised

ROTEL

Technical Manual



AM/FM STEREO RECEIVER

RX-830

MW/LW/FM STEREO RECEIVER

RX-830L

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INHALTSVERZICHMIS

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THE ROTEL CO., LTD.

ROTEL ELECTRONICS CO., LTD.

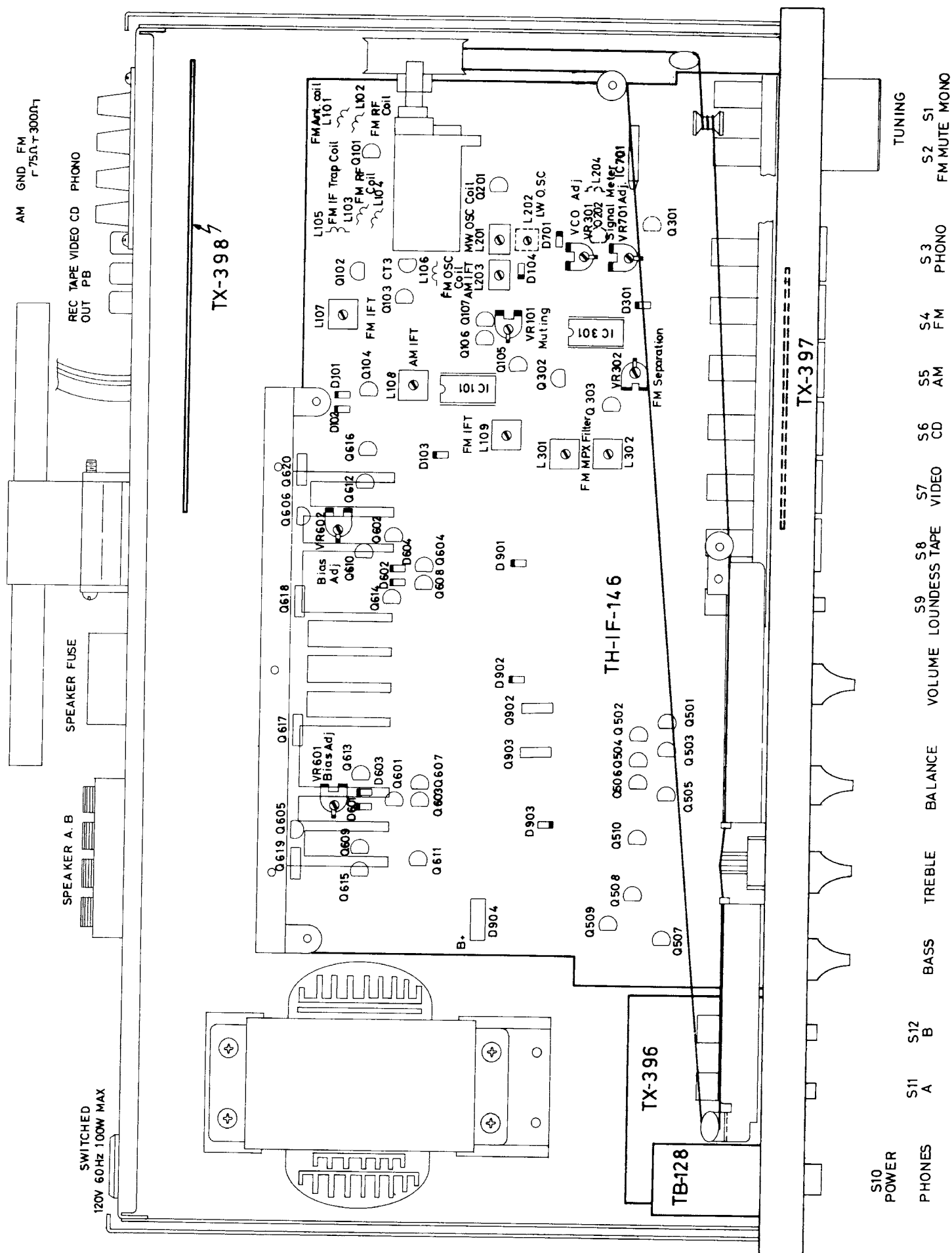
ROTEL HI FI LIMITED.

1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN
ROTEL BUILDING, 3F, 33-2 FU HSING N. ROAD, TAIPEI,
TAIWAN, REPUBLIC OF CHINA

2-4 ERICA ROAD, STACEY BUSHES, MILTON KEYNES,
BUCKINGHAMSHIRE, ENGLAND

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Chassis Layout/ Chassis-Anordnung/ Installation de Châssis



AM IF and RF Alignment/ Signal Indicator Calibration

Instruments: AM Signal Generator (400Hz 30% Modulated), ACVTVM and Oscilloscope.

AM IF Alignment (AM/FM, MW/LW/FM)

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	Pin no. 6 (on IF board through a 0.01 mfd Capacitor)	455 KHz	No interfering at low end of scale	L203, L108 (on IF board)	Maximum reading on AC VTVM.

MW RF Alignment (AM/FM, MW/LW/FM)

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Test Loop Radiate signal into ferrite loops-stick antenna.	600 KHz	600 KHz	L201 (OSC) and L001 (ANT) lead line side	Maximum reading on AC VTVM.
2		1400 KHz	1400 KHz	CT4 (OSC) and CT5 (ANT)	

LW FR Alignment (MW/LW/FM only)

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Test Loop Radiate signal into ferrite loop-stick antenna.	160 KHz	160 KHz	L202 (OSC) and L001 (ANT) against the lead line side	Maximum reading on AC VTVM.
2		330 KHz	330 KHz	CT202 (OSC) and CT201 (ANT)	

Power Amplifier Bias Adjustment

Instruments: DC milli-voltmeter

Notes: Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up Power Transistor and Heat Sink.

Set Volume Control to Minimum.

Step	Coupling		Adjust	Adjust for
	Plus Lead	Minus Lead		
1	TP3	TP1	VR601	DC milli-voltmeter reads 2.2mV.
2	TP4	TP2	VR602	

FM IF and RF Alignment/ Tuning and Signal Indicator Calibration

Instruments: FM Signal Generator (400Hz, 100% Modulated), H.D. Analyzer, Oscilloscope, AC VTUM and Tuning Meter.

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Antenna terminal	90 MHz	90 MHz	L106 (OSC)	Maximum reading on AC VTUM
2		106 MHz	106 MHz	CT3 (OSC)	
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Antenna terminal	90 MHz	90 MHz	L101, L102, L103 and L104 (RF)	Maximum reading on AC VTUM.
5		106 MHz	106 MHz	CT1 (ANT) and CT2 (FR)	
6		98 MHz	98 MHz	L107 (OSC)	
7	Repeat steps 4 and 5 unit no further improvement is noticed.				
8	Antenna terminal (1mV Input)	98 MHz	98 MHz	L109	Minimum reading on H.D. Analyzer.
9			No interfering	L109	

FM MPX Alignment

Instruments: FM Stereo Generator, AC VTVM and Oscilloscope.

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Antenna terminal	98 MHz Pilot.....10%	98MHz	VR 301	Stereo indicator light up
2		1 KHz.....90% Mod.		VR 302	best separation
3	Check the stereo indicator can be operated normally when pilot signal is reduce from 10% to 6%.				

MW-ZF und HF-Einstellung/ MW-Signalstarkeanzeige-Eichung

Instrumente: MW-Messender (400 Hz 30% moduliert), Wechselstrom-Roehrenvoltmeter und Oszillograph.

MW-ZF Einstellung (MW/UKW, MW/LW/UKW)

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Steckerstift 6 (auf ZF-leite- rplatte ueber 0.01 MF Kon- densator)	455 KHz	Kine Interfenz am unteren ska- lenende	L204, L205 (auf ZF- Leiterplatte)	Maximalanzeige am Roehrenvoltmeter

MW-HF Einstellung (MW/UKW, MW/LW/UKW)

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Mess-Signal mit Schleife in Fe- rrit antenna einspeisen.	600 KHz	600 KHz	L201 (OSZ) und L001 (ANT) Lotleine-Seite	Maximalanzeige am Roehrenvoltmeter
2		1400 KHz	1400 KHz	CT5 (OSZ) und CT4 (ANT)	

LW-HF Einstellung (MW/LW/UKW nur)

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Mess-Signal mit Schleife in Fe- rrit antenna einspeisen	160 KHz	160 KHz	L202 (OSZ) und L001 (ANT) gegen Lotleine- Seite	Maximalanzeige am Roehrenvoltmeter
2		330 KHz	330 KHz	CT7 (OSZ) und CT6 (ANT)	

Endverstärker-Vorspannung-Einstellung

Instrumente: DC-Gleichstrom-millivoltmeter

Anmerkung: Vor Einstellung der Vorspannung ist das Graet stwa 5 minuten mit nennleistung unter 8 ohm belastung zu betreiben,
um die Leistung-stransistoren und Kuühlbleche warm werden zu lassen.
Lautstärkerregeler Volumenkontrolle auf Minimum stellen.

Schritt	Anschluss		Abgleich	Abgleich auf
	Pruefstift	Minuspol		
1	TP3	TP1	VR601	DC-Gleichstrom-millivoltmeter auf 4.4mV einstellen.
2	TP4	TP2	VR602	

UKW-ZF und HF-Einstellung/ Signalstärkeanzeige-Eichung

Instrumente: UKW-Messender (400Hz 100% Moduliert), Klirrfaktormesser, Oszillograph, Wechselstrom-Roehrenvoltmeter

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Antennenkl- emmen anschiessen	90 MHz	90 MHz	L107 (OSZ)	Maximalanzeige am Roehrenvoltmeter
2		106 MHz	106 MHz	CT3 (OSZ)	
3	Schritt 1 und 2 wiederholen, bis kein weitere Verbesserung eintritt.				
4	Antennekl- emmen ansch- liessen	90 MHz	90 MHz	L101, L102, L103 and L104 (HF)	Maximalanzeige am Roehrenvoltmeter
5		106 MHz	106 MHz	CT1 (ANT) and CT2 (HF)	
6		98 MHz	98 MHz	L106 (OSZ)	
7	Schritt 4 und 5 wiederholen, bis kein weitere Verbesserung eintritt.				
8	Antennenkl- emmen ansch- liessen		98 MHz	L108	Minimalanzeige am Klirrfaktormesser
9	(Antennenkl- emmen ensp- annung 1mV	98 MHz	KEINE Inter- ferenz	L108	

UKW MPX-Einstellung

Instrumente: UKW -stereo Messender, Roehrenvoltmeter und Oszillograph

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Antennekl- emmen anschiessen	98 MHz Pilotton....10%	98 MHz	VR301	Stereoanzeige leuchtet auf.
2		1KHz.....90% Moduliert.		VR302	beste Trennung
3	Einwandfreier Stereoanzeigebetrieb muss auch noch gewährleistet sein, wenn der Stereopilotton von 10% auf 6% reduziert wird.				

Alignement AM IF et HF/

Indicateur de niveau de signal

Instruments: Générateur de signal AM (400Hz 30% modulé) AC VTVM et Oscilloscope.

ALIGNEMENT AM IF (AM/FM, MW/LW/FM)

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Brouche No. 6 (Sur IF plaque- tte par l'inter- médiaire d'un condensateur de 0.01 mfd.	455 KHz	Non interférence al'extrémité de l'échelle	L204, L205 (sur la pla- quette IF)	Lecture maximum sur le voltmètre électronique AC VTVM.

Alignement MW RF (AM/FM, MW/LW/FM)

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Boucle de mesure Envoyée le signal sur ferrite à boucle	600 KHz	600 KHz	L201 (OSC) et L001 (ANT) Côté de ligne de connexion	Lecture maximum Sur AC VTVM
2		1400 KHz	1400 KHz	CT5 (OSC) et CT4 (ANT)	

Alignement LW RF (MW/LW/FM seulement)

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Boucle de mesure Envoyée le signal sur ferrite à boucle	160 KHz	160 KHz	L202 (OSC) et L001 (ANT) contre le côté de ligne de connex- ion	Lecture maximum sur AC VTVM.
2		330 KHz	330 KHz	CT7 (OSC) et CT6 (ANT)	

Reglage de la polarisation de l'amplificateur de puissance

Instrument: DC milli-voltmètre

Note: Avant le réglage de la polarisation, passer à peu près 5 minutes avec une proportion de la sortie du courant (8 ohm) et réchauffer le transistor de puissance et le snk.

Mettre le contrôle de l'étendue au minimum.

Point	Couplage		Réglage	Réglage pour
	Positif	Moins		
1	TP3	TP1	VR601	DC-millivoltmeter lit 4.4 mV.
2	TP4	TP2	VR602	

Alignement FM IF et HF/ Indicateur de force du signal

Instruments: (400Hz, 100% modulé) Analyseur H.D., Oscilloscope, AC VTVM et Compteur de syntonisation.

Point	Générateur		Ecran d'accord	Reglage	Réglage pour
	Couplage	Fréquence			
1	Borne d'antenne	90 MHz	90 MHz	L107 (OSC)	Lecture maximum sur ACVTVA
2		106 MHz	106 MHz	CT3 (OSC)	
3	Répéter les points 1 et 2 jusqu'aucun perfectionnement est marqué				
4	Borne d'antenne	90 MHz	90 MHz	L101, L102, L103 et L104 (RF)	Lecture maximum sur AC VTVM.
5		106 MHz	106 MHz	CT1 (ANT) et CT2 (RF)	
6		98 MHz	98 MHz	L106 (OSC)	
7	Répéter les points 4 et 5 jusqu'aucun perfectionnement est marqué				
8	Brone d'antenne		98 MHz	L108	Lecture maximum sur AC VTVM
9	(1mV absorbée)	98 MHz	non interférence	L108	

Alignement FM MPX

- Instruments: FM stéréo Générateur, AC VTVM et Oscilloscope.

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Borne d'antenne	98 Mhz lampe		VR 301	Indicateur stéréo allume
2		témoin 10% 1 KHz 90% Mod.	98 MHz	VR 302	Séparation la plus meilleure
3	Eraminer l'indicateur stéréo peut être opéré normalement lorsque le signal de lampe témoin est véduite de 10% à 6%				

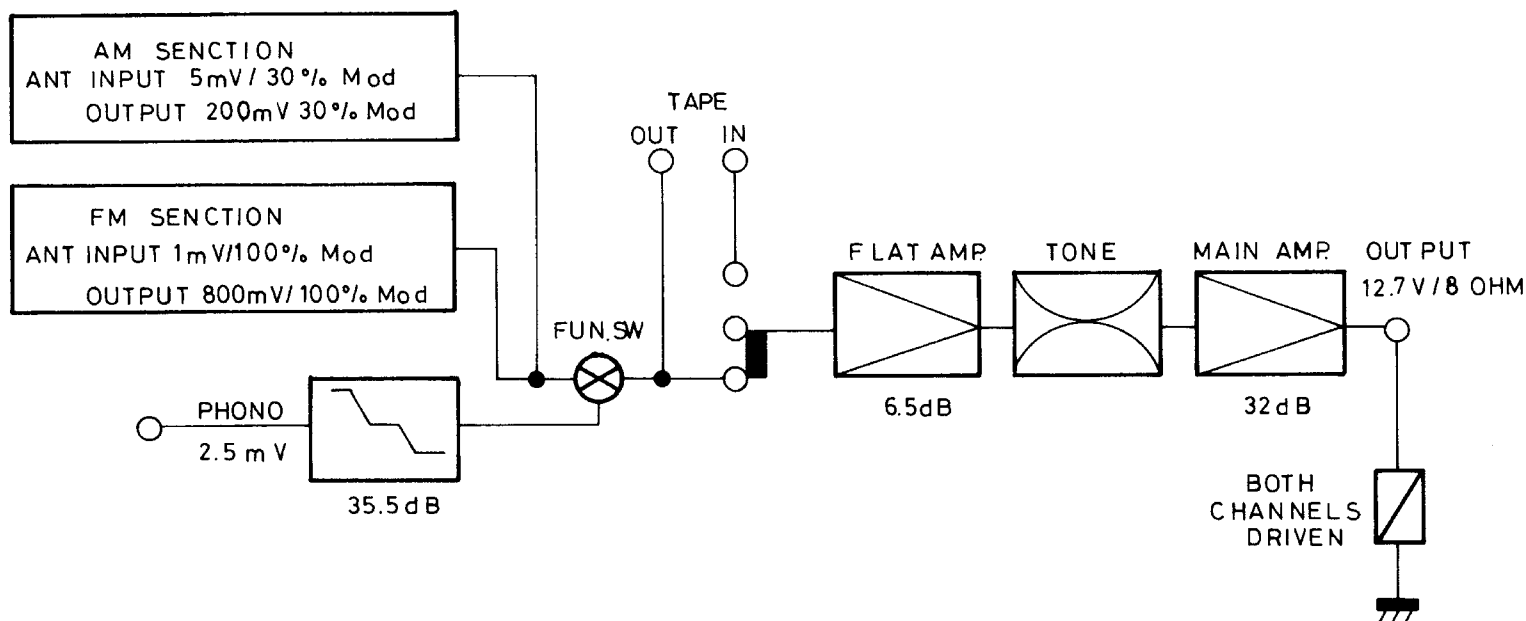
Repair Parts List/Reparaturteilliste/ Liste des pièces de rechange

Schematic Location	Computer No.	Parts No.	Description
TRANSISTORS, DIODES AND IC'S			
Q101	TR50000012	0322SK195	2SK195 FM RF AMP.
Q102	TR30000133	032LC1674	LC1674 FM MIX
Q103	TR30000133	032LC1674	LC1674 FM O.S.C.
Q104	TR30000078	032LC1675	LC1675 FM IF AMP.
Q105	TR30000248	032LC945	LC945 For Mute
Q106	TR30000248	032LC945	LC945 For Mute
Q107	TR30000248	032LC945	LC945 For Mute
Q201	TR30000078	032LC1675	LC1675 MW O.S.C.
Q202	TR30000078	032LC1675	LC1675 LW O.S.C.
Q203	TR10000102	0322SA929	2SA929 FM Signal Meter
Q301	TR30000248	032LC945	LC945 For Mute
Q302	TR30000108	0322SC1570	2SC1570 Auto AMP.
Q303	TR30000108	0322SC1570	2SC1570 Auto AMP.
Q304	TR10000102	0322SA929	2SA929 FM Signal Meter SW.
Q501,Q502	TR10000102	0322SA929	2SA929 Flat Tone AMP.
Q503,Q504	TR30000108	0322SC1570	2SC1570 Flat Tone AMP.
Q505,Q506	TR10000102	0322SA929	2SA929 Flat Tone AMP.
Q507,Q508	TR10000102	0322SA929	2SA929 Flat Tone AMP.
Q509,Q510	TR10000102	0322SA929	2SA929 Flat Tone AMP.
Q601,Q602	TR10000023	0322SA1016	2SA1016 Constant Current
Q603,Q604	TR10000023	0322SA1016	2SA1016 Differential AMP.
Q605,Q606	TR10000102	0322SA929	2SA929 Main AMP Bias
Q067,Q068	TR10000023	0322SA1016	2SA1016 Differential AMP.
Q609,Q610	TR10000059	0322SB764	2SB764 Main AMP Bias
Q611,Q612	TR30000108	0322SC1570	2SC1570 Pre-Driver
Q613,Q614	TR30000080	0322SD863	2SD863 Driver
Q615,Q616	TR10000059	0322SB764	2SB764 Driver
Q617,Q618	TR40000057	0322SD613	2SD613 Power Driver
Q619,Q620	TR20000051	0322SB633	2SB633 Power Driver
Q901,Q902	TR40000069	0322SD600K	2SD600K Stabilizer
Q903	TR10000047	0322SB631K	2SB631K Stabilizer
D001	DD40000095	034LN224RP	LN224RP Power Ind
D002	DD40000174	034LN25RP	LN25RP Dial Pointal
D101,D102	DD10000111	034IN60P	IN60P FM AGC Det.
D103	DD10000100	034IN4148	IN4148 Switch Rectifier
D301	DD10000100	034IN4148	IN4148 Switch Rectifier
D601,D602	DD10000100	034IN4148	IN4148 Bias Compensator
D603,D604	DD10000100	034IN4148	IN4148 Bias Compensator
D701	DD10000100	034IN4148	IN4148Switch Rectifier
D702~D704	DD40000095	034LT-13217	LT-13217 Signal Ind.
D705	DD40000101	034LT-13237	LT-13237 Stered Ind.
D901~D903	DD20000077	034WZ-162	WZ-162 Zener Reg.
D904	DD10000019	034KBP-02	KBP-02 Rectifier
IC101	IC00001012	031BA4220	BA4220 IF IC (FM/MW)
IC301	IC00000354	031LA3361	LA3361 MPX Decoder
IC401	IC00000718	031NE5532N	NE5532N Phono AMP.
IC701	IC00000925	031LB1403	LB1403 LED Driver

Schematic Location	Computer No.	Parts No.	Description
COILS AND VARIABLE RESISTORS			
L001	LB32960000	021TRL-296AS2	TRL-296 AS2 MW Ant. Coil
L001	LB33050003	021TRL-305AS2	TRL-305 AS2 MW/LW Ant. Coil
L101	LC01400006	021RL-140	RL-140 FM Ant. Coil
L102~L104	LC1410000	021RL-141	RL-141 RF Coil
L105	LM00000073	021TRL-239	2.2μH TRL-239 FM IF Trap Coil
L106	LC11570000	021TRL-157	TRL-157 FM OSC Coil
L107	LC01280001	021RL-128	RL-128 FM IFT
L108	LC21730000	021TRL-173	TRL-173 AM IFT
L109	LC21720006	021TRL-172A	TRL-172A FM IFT Quadrature Detector
L110	LM00000152	021TRL-147	8.2MH TRL-147 67KHz Trap Coil
L201	LC21930001	021TRL-193	TRL-193 MW OSC Coil
L202	LC21990009	021TRL-199	TRL-199 LW OSC Coil
L203	LC21960005	021TRL-196	TRL-196 AM IFT
L204	LM00000061	0212MH	2MH LW Filter
L301,L302	LC21940006	021TRL-194	TRL-194 FM MPX Filter
L601,L602	LC22340000	021TRL-234	TRL-234 Anti-Parasitic
VR101	RV20000193	05108-301-10KB	10KB For Muting
VR301	RV20000193	05108-311-10KB	10KB VCO Adj.
VR302	RV20000211	05108-301-1KB	1KB FM Separation
VR303	RV20000351	05108-211-10KB	10KB FM Signal Meter Adj.
VR501	RV10000755	0514TR-2063	4TR-2063 100KBx2 Volume Control
VR502,503	RV10000263	0514TR-1160	4TR-1160 50KBx2 Bass/Treble Control
VR504	RV10000664	0514TR-1991	4TR-1991 20KW Balance Control
VR601,602	RV20000302	05108-301-100J	100J Bias Adj.
VR701	RV20000181	05108-301-100KB	100KB Signal Meter Adj.
SWITCH AND OTHER			
S1,S2	SH12000260	0612TF-T0003	2TF-T0003 FF2080 MONO, MUTE OFF
S3~S9	SH17000055	0614TR-1993	4TR-1993 PHONO/FM/AM/CD (LW) VIDEO/TAPE MONITOR/LOUDNESS
S3~S9	SH17000067	0614TR-1994	4TR-1994 PHONO/FM/AM/CD (LW) VIDEO/TAPE/MONITOR/LOUDNESS
S10	SH40000120	061C-3600B	C-3600B Power SW
S11,S12	SH12000272	0612TF-T0028	2TF-T0028 FF2080 2 Key Push SW Speakers A, B
F601,602	FU11000050	036L250V3A	250V 3A Long
	FU21000149	036M3A	Main 3A
	FU12000082	036ASG3250V3A	250V 3A UL
F901,902	FU12000045	036ASG3250V4A	250V 4A UL
	FU11000074	036L250V4A	Long 250V 4A
	FU21000071	036M4A	Main 4A

Gain Diagram/Verstärkungsdiagramm/

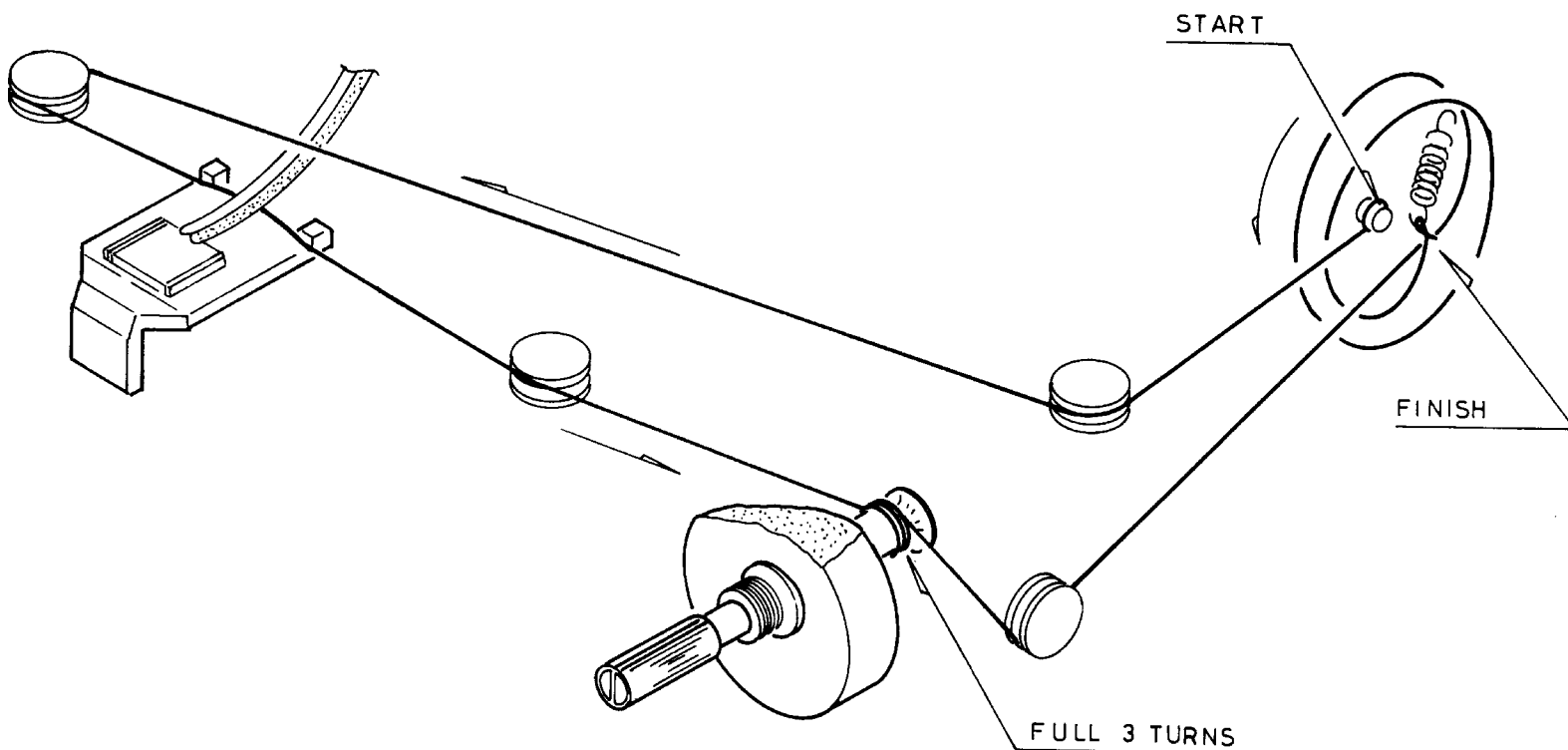
- Diagrammed gain



Dial Stringing Diagram

Skalenantriebsschema

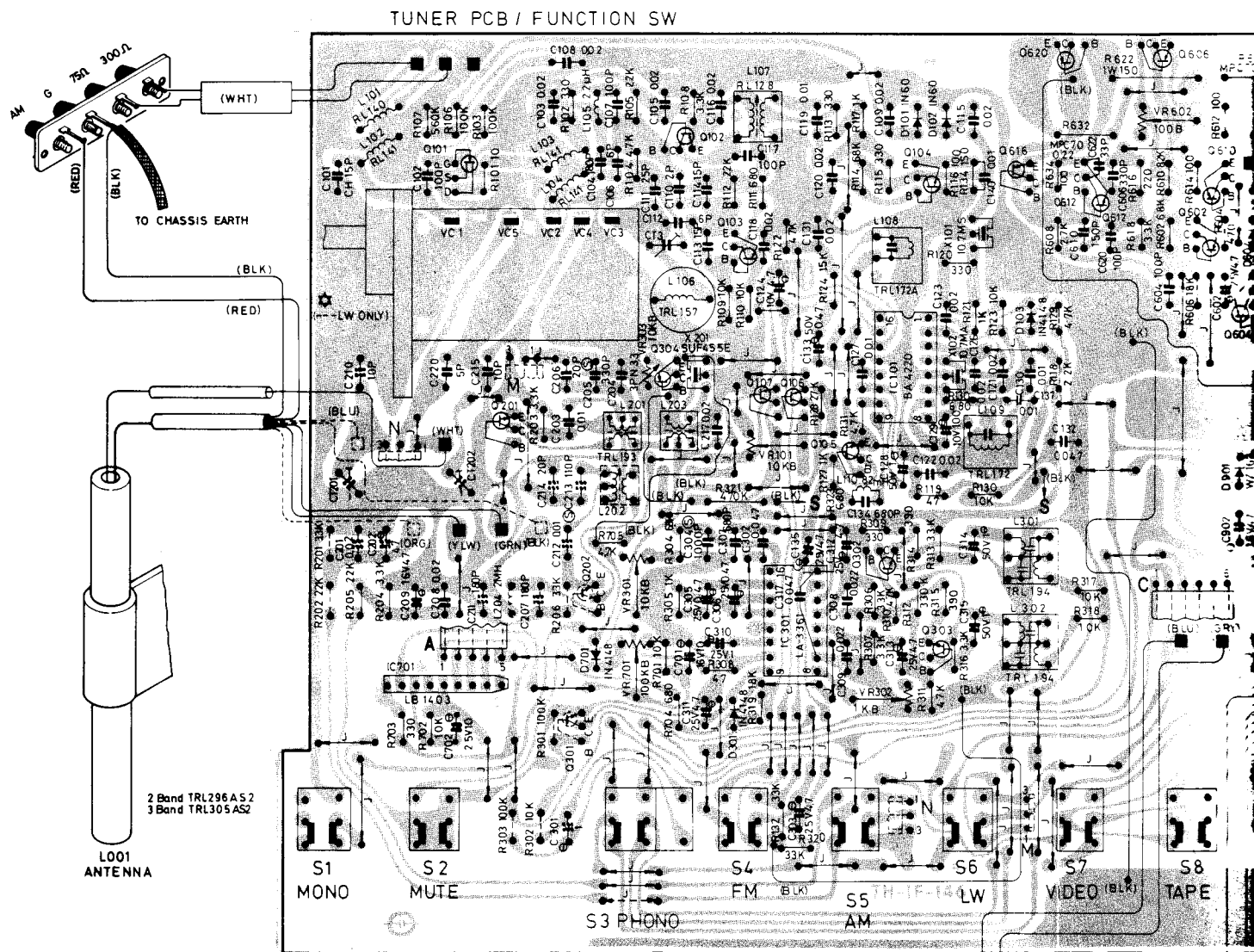
Diagramme des cable d'entrainement



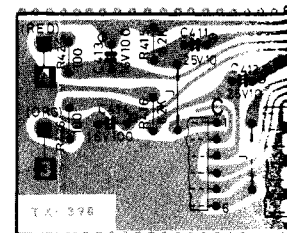
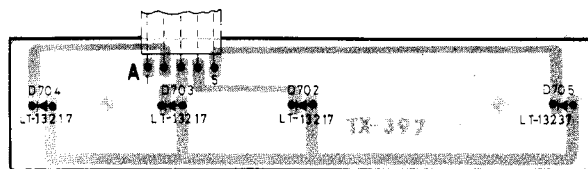
Note: Carry out stringing with the front end set at VC maximum.

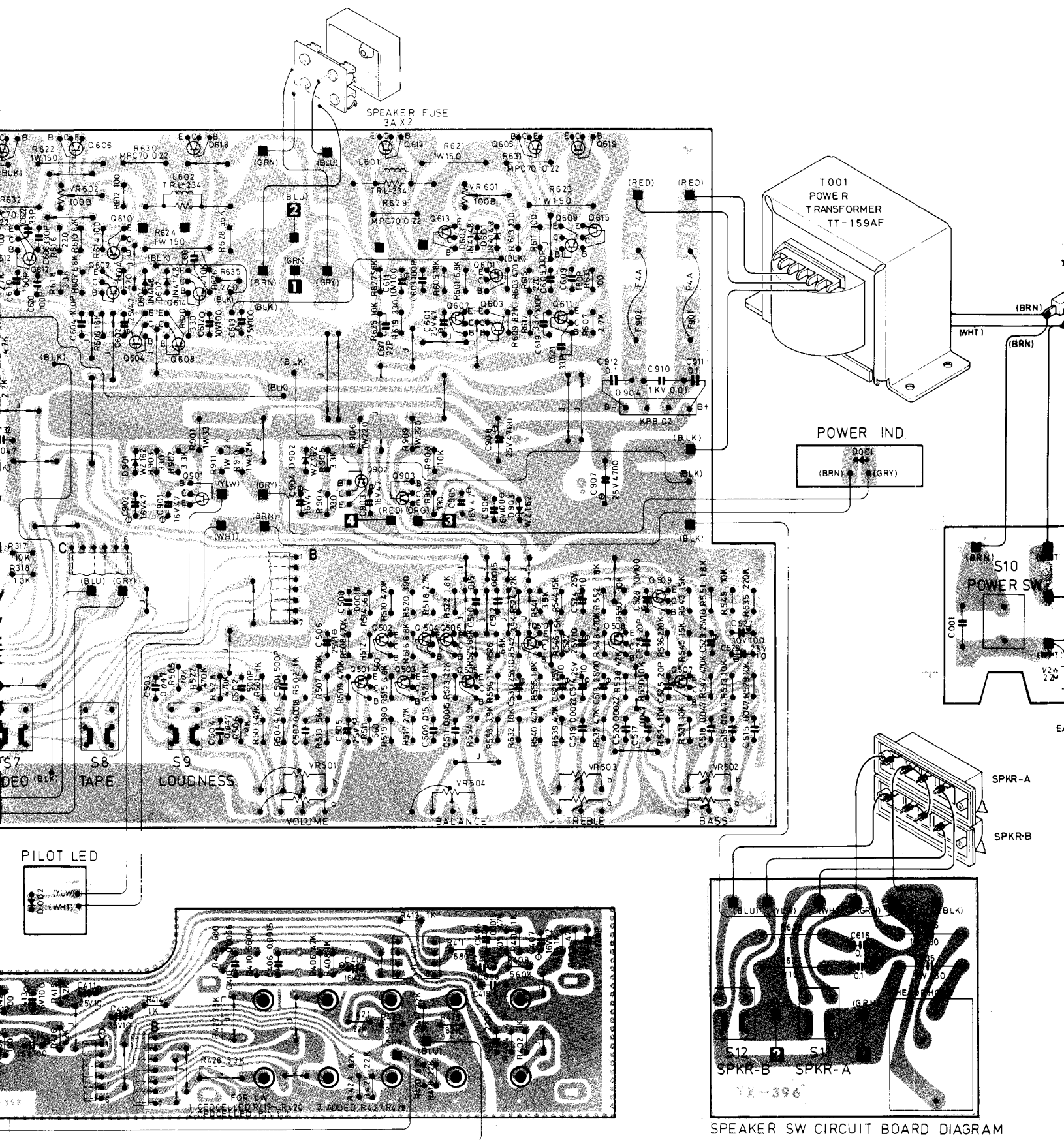
Zur Beachtung: Antriebsseil mit dem Drehko der Eingangs-Stufe in Maximumstellung verlegen.

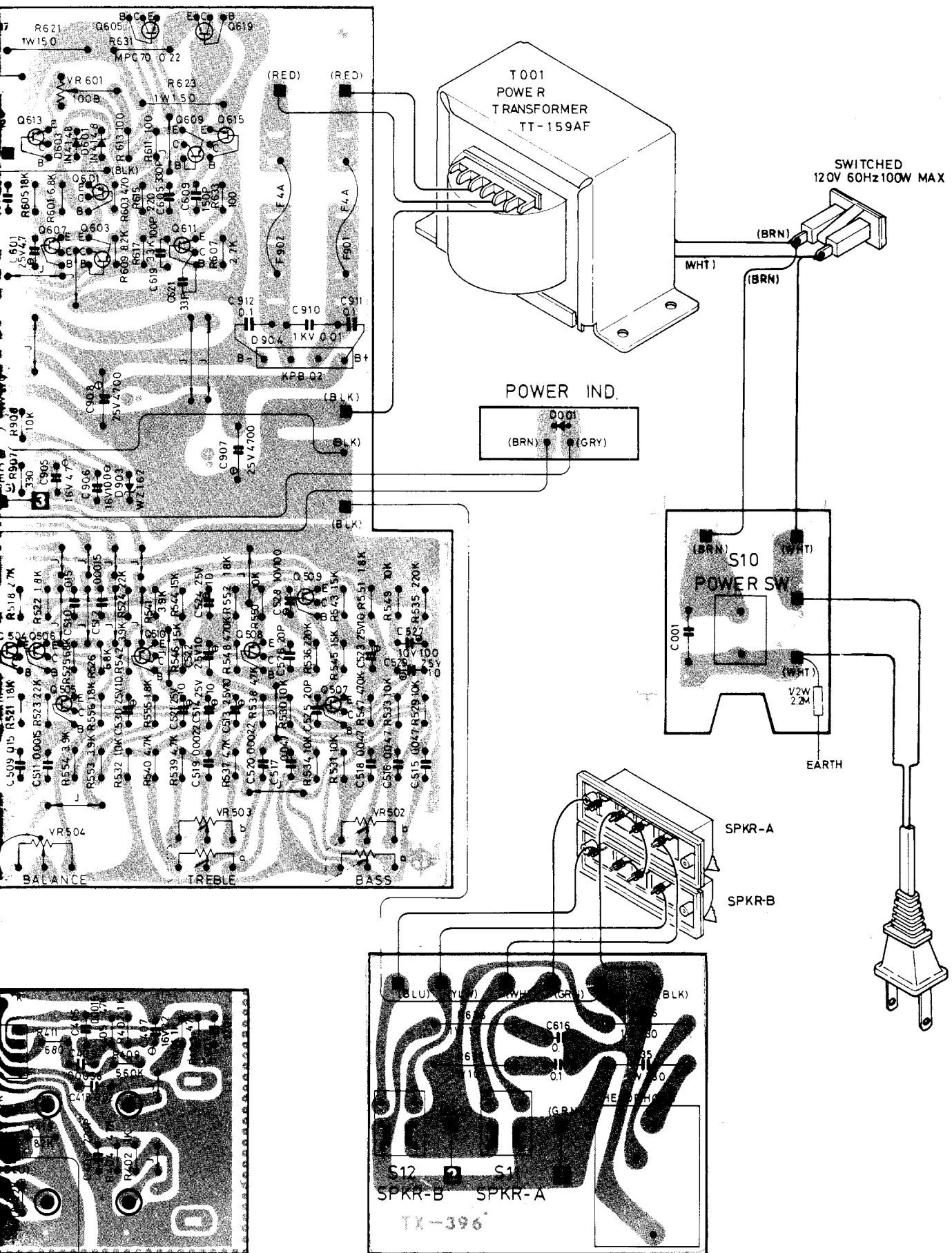
Note: Effectuer le câblage avec le condensateur réglable de l'entrée réglé au maximum.



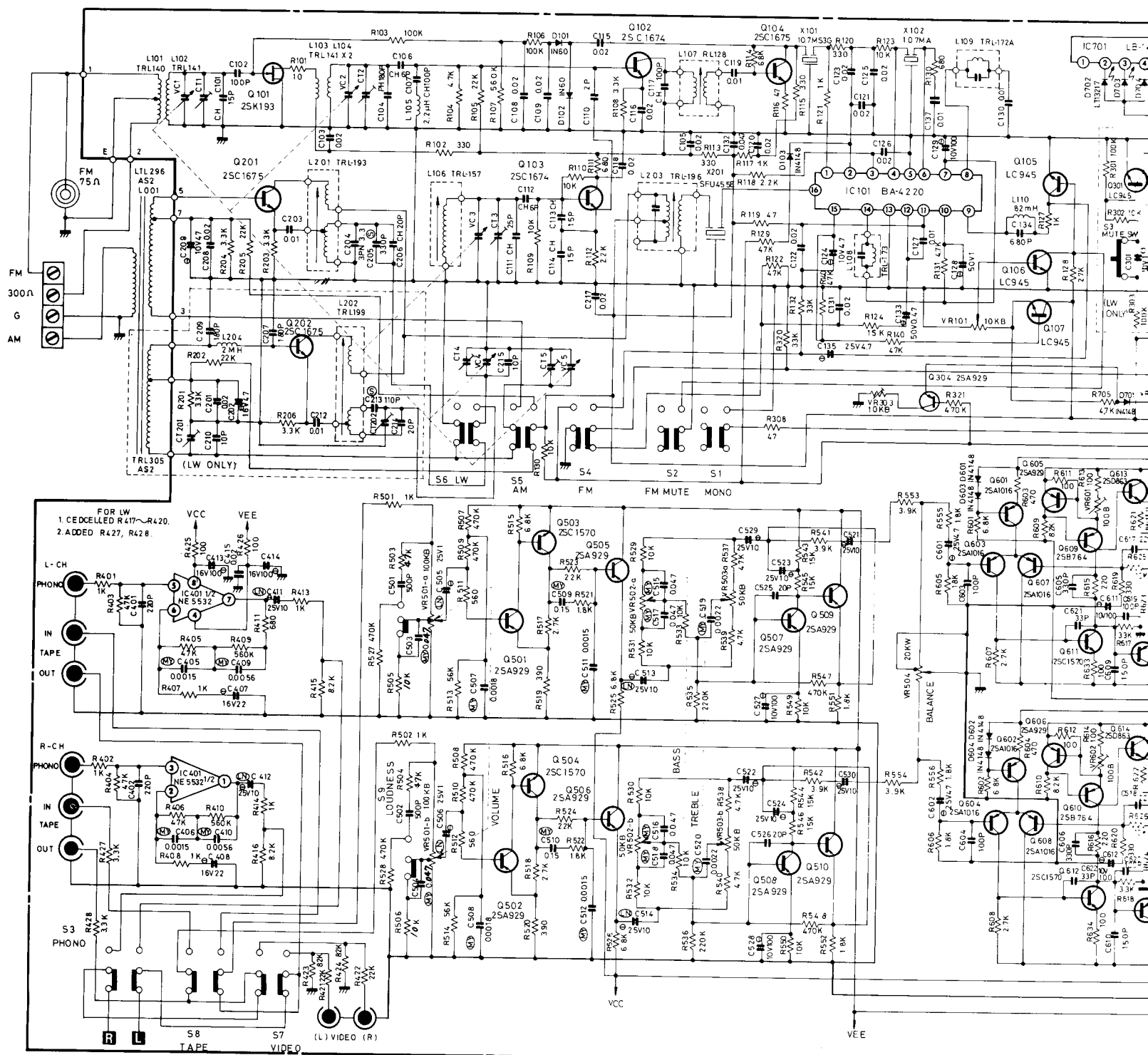
PILOT LED







SPEAKER SW CIRCUIT BOARD DIAGRAM



MODEL RX-830

NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGE
FOR IMPROVEMENT WITHOUT PRIOR NOTICE.

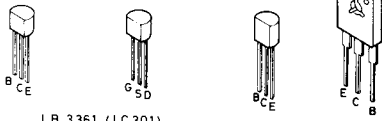
RESISTORS

5% TOLERANCE UNLESS OTHERWISE NOTED
K---KILO OHM
M---MEGA OHM
V---COMPOSITION RESISTORS 1/2 WATT
RSU METAL OXIDE FILM RESISTORS
NON MARK LOW NOISE TYPE CARBON RESISTORS

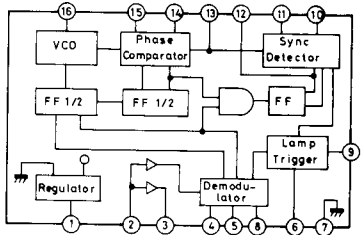
CAPACITORS

Ⓛ---LOW NOISE ELECTROLYTIC CAPACITORS
Ⓜ---MYLAR FILM CAPACITORS
Ⓟ---POLYSTYRENE FILM CAPACITORS
Ⓣ---TANTALUM CAPACITORS
Ⓢ---ELECTROLYTIC CAPACITORS
NON MARK CERAMIC CAPACITORS
UNLESS OTHERWISE NOTED IN SCHEMATIC ALL
CAPACITANCE VALUES ARE EXPRESSED IN MFD

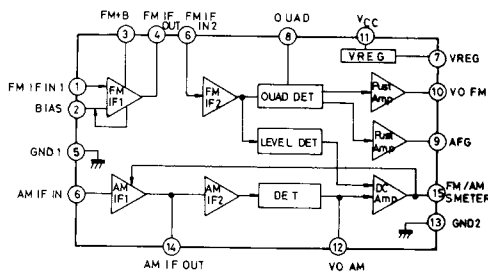
25C1675 25C1674 25D863 25B633
LC845 25C1570 25B764 25Q600
25A929 25A1016 25K193



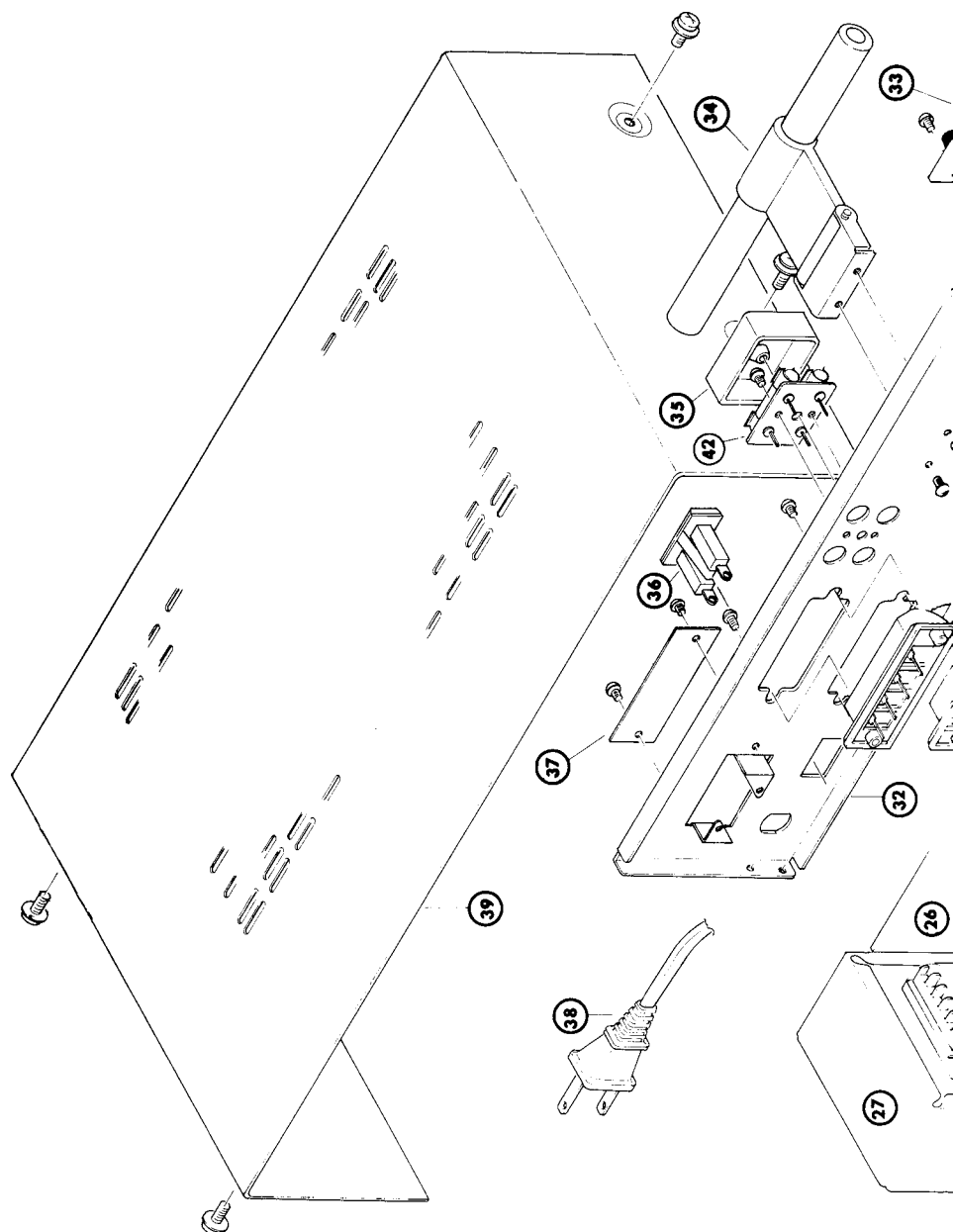
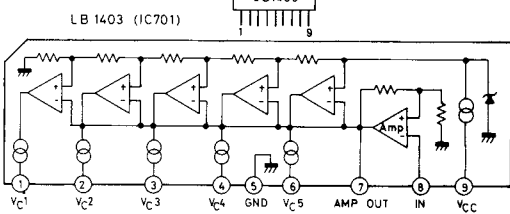
LB 3361 (IC 301)

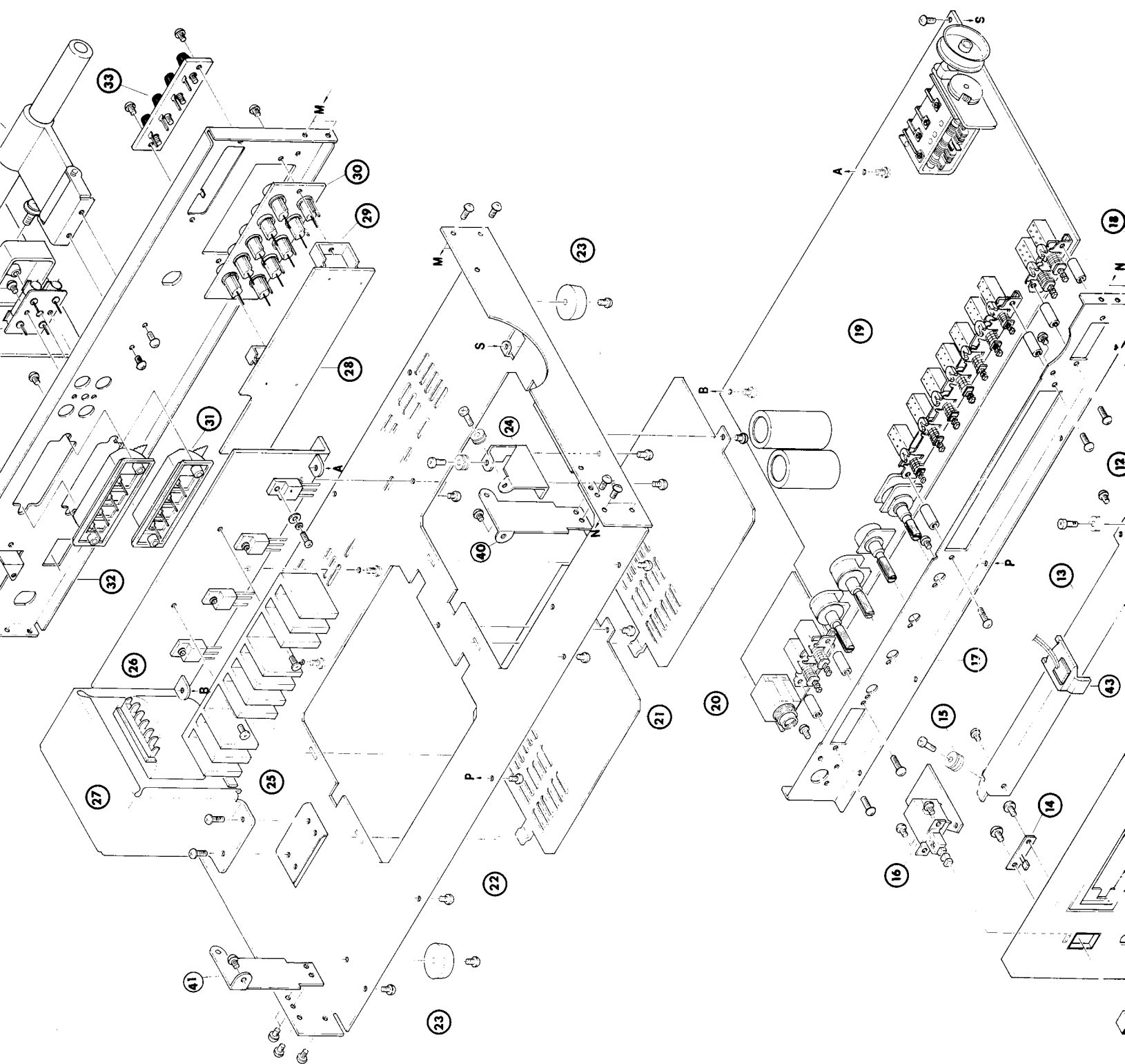


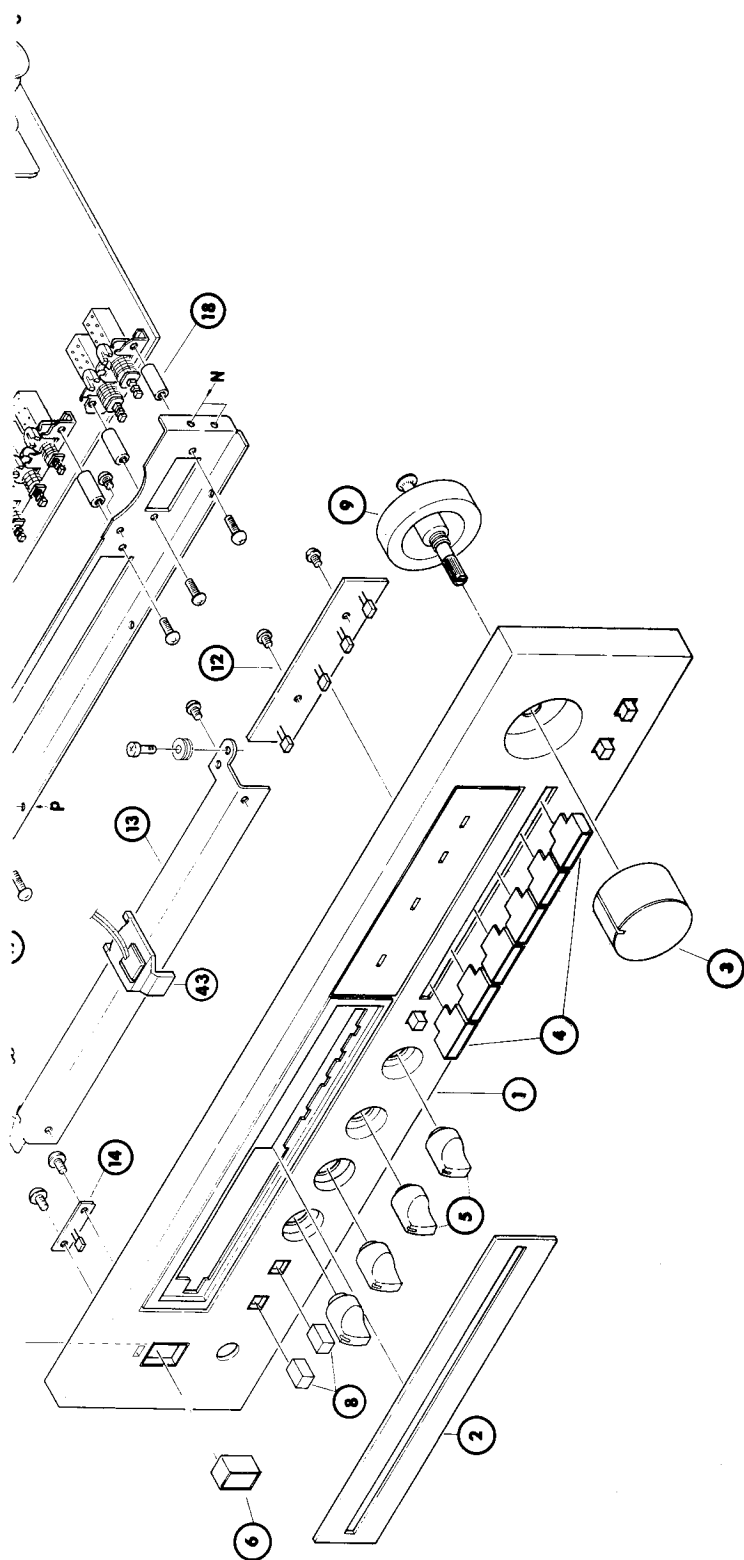
BA 4220 (IC 101)



LB 1403 (IC 701)







Key No.	Computer No.	Parts No.	Description
1.	AA10000844	0102TVR-1A#1	Plas Front Panel
	AA10000856	0102TVR-1A#2	Plas Front Panel
2.	AD00000464	0154TVR-3A# 1	Dial Board
	AD00000476	0154TVR-3A#2	Dial Board
3.	KB10000912	0124TR-1968#1	Knob.
4.	KB20000982	0124TR-2009	Push Button
5.	KB10000961	012C-3187#2	Knob BLK 13F
6.	KB20000507	012C-3982#2	Push Button
7.			
8.	KB20000994	0124TR-2010	Push Button
9.	SF00000112	0194TR-1684	Tuning Shaft K-30
10.			
11.			
12.	PC04397000	016TX-397	P.C.B.
13.	SP10003696	0134TVF-9A	Dial Pointer Slide Board
14.	PC04390004	016TX-390	P.C.B.
15.	PU10000032	0194TR-905A	Pulley
16.	PC16128905	016TB-128A	P.C.B.
17.	SP10003660	0134TVF-48	SW Support
18.	BC00000192	0714TR-1989	Cylinder Bush
19.	PC12146007	016TH-IF-146R-1	P.C.B.
20.	PC04396006	016TX-396	P.C.B.
21.	SP30000057	0134TVF-7	Button Cover
22.	AM00000909	0132TVF-2A	Chassis Body
23.	FT00000035	019C-3355	Plastic Foot
24.	SP10003672	0134TVF-10	Pulley Support
25.	AH30000135	0134TR-1845#3	SUB Heat Sinking Board
26.	AH10000348	0133TVF-6	Heat Sinking Board
27.	PT15901106	022TT-159-AF	Power Transformer
	PT15907108	022TT-159-GF	Power Transformer
28.	PC04398003	016TX-398R-1	P.C.B.
29.	SP10003969	0134TR-2014	Pin Jack Board Support
30.	JP10000059	0624TR-1138B#3	10P Pin Jack
	JP10000072	0624TR-1138B#5	10P Pin Jack
31.	TP10000131	0623TR-1732#4	4P Push Terminal
32.	AR10000409	015TRP-336	Printed Rear Chassis
	AR10000410	015TRP-337	Printed Rear Chassis
	AR10000422	015TRP-338	Printed Rear Chassis
33.	TP20000018	062C-1812-T	4P Screw Terminal
34.	LB32960000	021TRL-296AS2	Bar ANT. Ass'y
	LB33050003	021TRL-305AS2	Bar ANT. Ass'y
35.	FD00000082	0624TR-1221	Fuse Holder Cover
36.	SA00000627	062C-3909AC-IF	AC Outlet Socket
	SA00001152	062S-I6498#21	AC Outlet Socket
37.	NP00000015	0154TR-525#1	Name Plate TNP-197
	NP00000076	0154TR-525#7	Name Plate TNP-203
	NP00000519	0154TR-525#24	Name Plate TNP-251
	NP00000064	0154TR-525#6	Name Plate TNP-202A
	NP00000246	0154TR-525#17	Name Plate TNP-238
	NP00000441	0152TZR-24	Name Plate TNP-234
	NP00000507	0154TR525#23	Name Plate TNP-250
	NP00000090	0154TR525#9	Name Plate TNP-205
38.	CD00000036	0724TR-670#1	AC Power Cord
	CD00000097	0724TR-670#2	AC Power Cord
	CD00000085	072C-2504A	AC Power Cord
	CD00000115	072C-3763	AC Power Cord
	CD00000048	0724TR-1037	AC Power Cord
39.	AU00000361	0142TWE-5B#25	Upper Cover
40.	SP10004159	0134TR-2037#2	Front Panel Support (R)
41.	SP10004147	0134TR-2037#1	Front Panel Support (L)
42.	FD00000033	062C-1435-T	2P Fuse Holder
43.	SA00000561	0193TXV-14B	Dial Pointer Socket