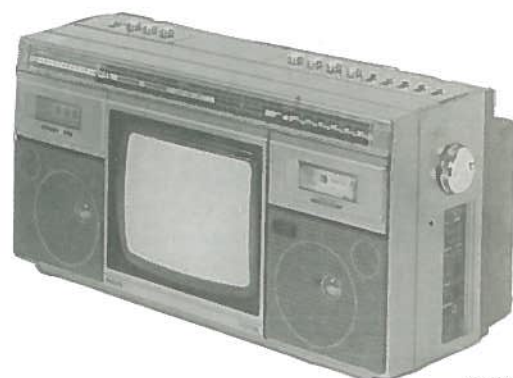


Service
Service
Service

11 FEB. 1982

SCHADUWARCHIEF



27357A

Service Manual

TECHNICAL DATA

System	: CCIR-PAL
Power supply voltage	: 220 V ~ 50 Hz 12 V---
Power consumption	: 85 W at 220 V 59 W at 12 V
Output impedance sound	: 2 x 4 Ω
Sound output	: 2 x 3,5 W
Aerial input impedance	: 75 Ω - Coax.
Deflection	: magnetic
Electrostatic focusing	



600 mm



303 mm



330 mm



14 kg

Automatic search tuning
system

Picture tube : 10in - 76°

Adapted for VCR

Television:

IF sound	: 33,4 MHz
FM sound	: 5,5 MHz
	: 5,74 MHz

IF chrominance : 34,47 MHz

IF luminance : 38,9 MHz

Subcarrier : 4,43 MHz

Radio:

IF-AM : 468 kHz

IF-FM : 10,7 MHz

Recorder

Tape speed : 4,75 cm/s

wow and flutter : $\leq 0,3\%$

VHF : 48 - 301 MHz

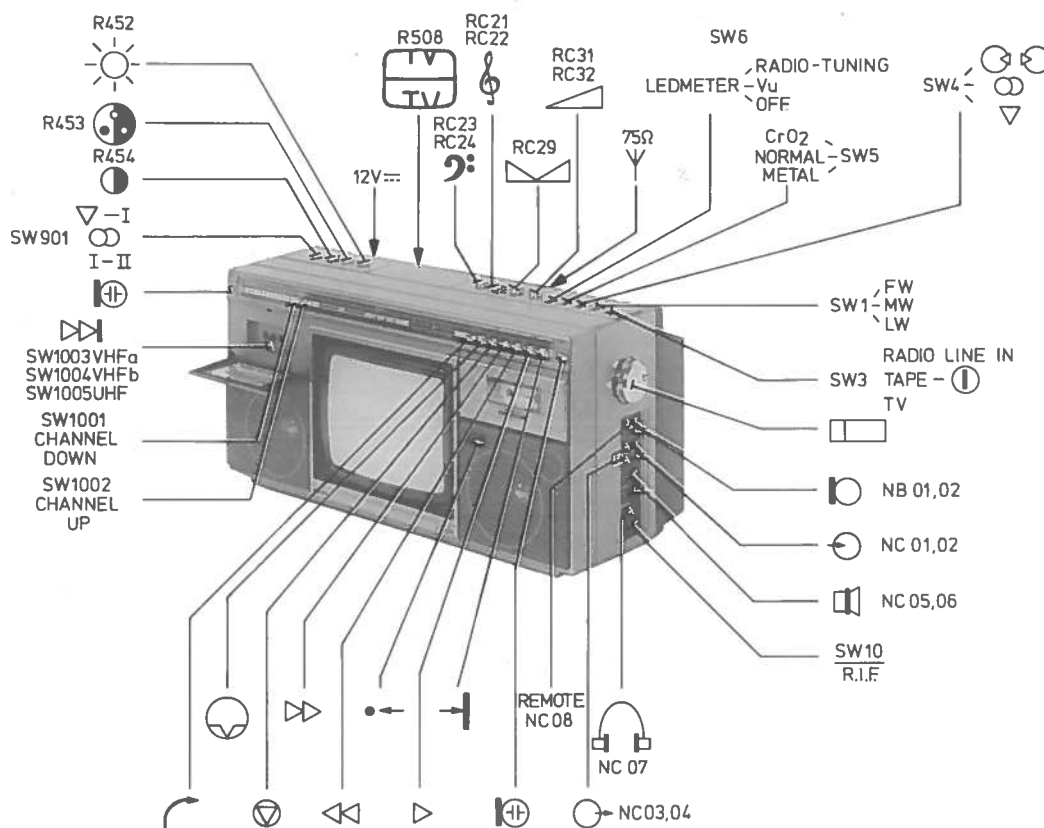
UHF : 470 - 892 MHz

FM : 87,5 - 108 MHz

MW : 510 - 1605 kHz

LW : 150 - 285 kHz





27 016B12

WARNINGS

1. Safety regulations require that - in case of repair - the receiver be restored to its original condition and that all parts must be replaced by those having identical specifications.
2. To prevent damage to ICs and transistors, any flashover of the EHT must be avoided.
Use a suitable instrument to check the EHT.
Discharging the picture tube should be carried out exclusively in the manner described in Fig. 1.
3. Be careful during meter checks on the EHT-section and on the picture tube.
4. Never replace parts or components when the set is electrically live.
5. Wear safety goggles when replacing the picture tube.
6. All adjustments are to be made with a non-conducting plastic tool instead of with a metal tool. Short-circuits or circuit instability may result from the accidental grounding.
7. It may occur that during certain voltage measurements the supply voltage "hiccups" one time. Note that owing to this hiccup programme 1 is switched on.

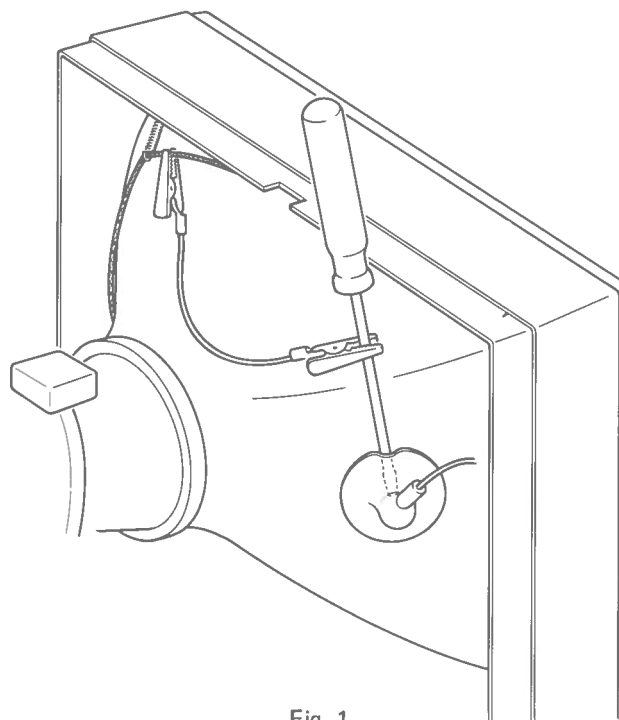


Fig. 1

21608C3

NOTE:

1. The semiconductors stated in the circuit diagram and in the partslists are fully intermixable per item number with those in the set, irrespective of the type indication on these semiconductors.
2. Oscillograms are to be measured under the following conditions:
 - a. Take the input signal from a colour bar generator (type PM5509 or PM5519).
 - b. Connect an oscilloscope (range 0,1 V/div - DC) via a 10:1 attenuator probe to pin 7-IC401-2B.
 - c. Adjust brightness control until the black bar's level in the video signal is at 6 V (refer to Fig. 2). Adjust contrast control R454 until the amplitude of the video signal is at 1 V_{pp}. Adjust saturation control for 5,5 VDC on pin 2 of IC801.
3. The DC voltages stated in the circuit diagrams are average values, measured under the following conditions:

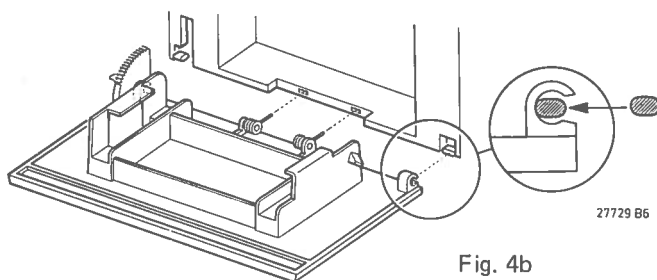
For Television:

Set switch SW3 to TV. No signal applied to aerial input.

Set brightness control R452 to minimum, contrast control R454 to maximum and saturation control R453 to maximum.

MECHANICAL INSTRUCTIONS

1. **Removal of backcover (refer to Fig. 3)**
 - Take off eight screws (1).
 - The backcover may now be lifted off.
2. **Removal of Radio-section PC-board and Recorder Section**
 - Remove backcover.
 - Remove tuning knob (2) and four control knobs (3).
 - Slide Video PC-board backwards.
 - Remove nine screws (4).
 - Disconnect those leads which enable the Radio-section PC-board to be taken out.
 - The PC-board may now be lifted out of the cabinet after removing bottom edge of PCB slightly from the cabinet.
3. **Removal of cassette compartment lid (refer to Fig. 4a)**
 - Depress EJECT button.
 - Use a screwdriver to release the stop boss on the lid.
 - Remove the lid.
4. **Cassette lid placement (refer to Fig. 4b)**
 - When refitting the cassette lid, make sure that the co-moulded hinge pins on the cabinet are correctly pressed into the hinge joint on the cassette lid.



For Radio:

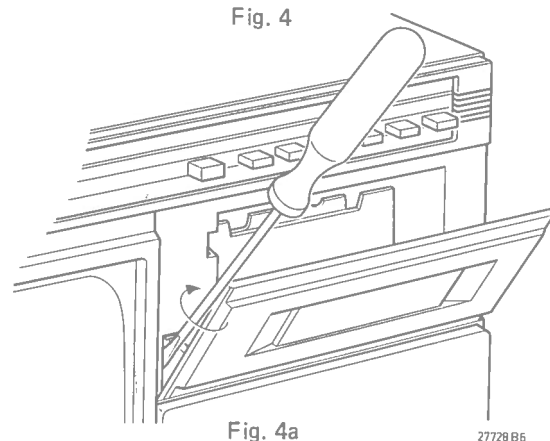
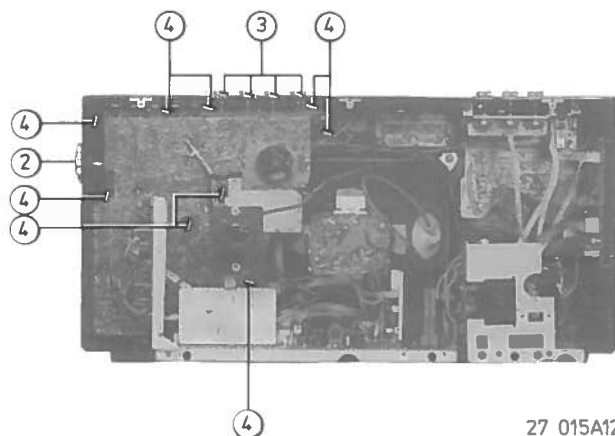
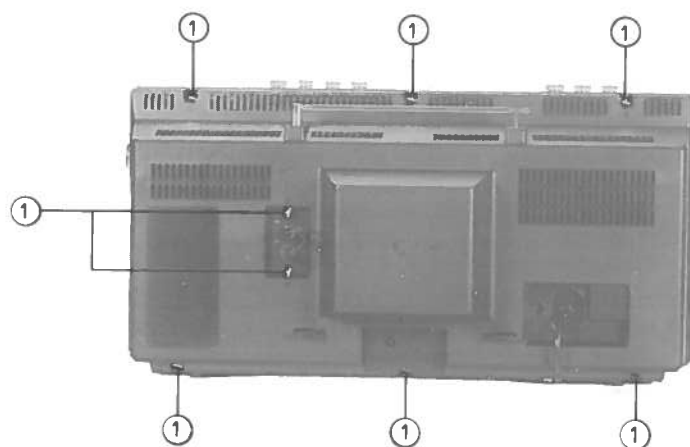
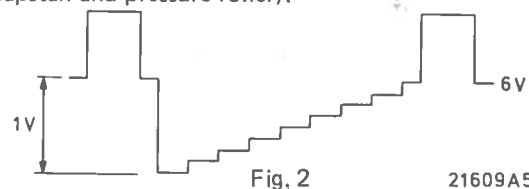
Set switch SW3 to RADIO. No signal applied to aerial input.

Tune radio to position of no reception.

For Recorder:

Set switch SW3 to TAPE. Select RECORD mode on recorder.

4. DC voltages and oscillograms are to be measured relative to the nearest ground point.
5. It is recommended to clean the recorder after about 500 working hours, using alcohol or spirit (parts to be cleaned: erase head, record/playback head, belts, capstan and pressure roller).



PICTURE ADJUSTMENTS

Note:

The colour purity and convergence adjustments described hereinafter need only be carried out when a total readjustment is required or when a new picture tube has been mounted. In other cases, for instance after replacing the deflection unit, it will usually not be necessary to remove the rubber wedges (E in Fig. 5). Corrections by means of the multipole unit will then suffice.

I COLOUR PURITY, see Fig. 5

1. Check correct positioning of all components on the neck of the colour picture tube.
2. Position the receiver facing East or West and switch on the set.
Tune in a cross-hatch pattern and set contrast control to minimum.
Turn brightness control to maximum and allow set to warm up for 15 minutes.
3. Adjust the static convergence by means of the tags "B" and "D" (if necessary, see item II).
4. Rotate SW501 on U1658 (for vertical centring) to its mid-position.
5. Rotate R861 (green adjustment) and R868 (blue adjustment) on U1606 counterclockwise. Rotate R853 (red adjustment) on U1606 clockwise until a red raster is obtained.
6. Loosen fixing screw "C" of deflection unit.
7. Pull deflection unit against multipole unit and tighten fixing screw "C" so that deflection unit can still be moved somewhat stiffly.
8. By turning the colour purity rings with tags "A", the vertical red bar is adjusted nearest to the centre of the screen, whilst the central horizontal line should be as straight as possible.
9. Slide the deflection unit until the screen of the picture tube is entirely and uniformly red, whilst avoiding too far a shift of the picture in vertical direction.
10. Check the green colour purity by turning R853 (red adjustment) fully counterclockwise and R861 (green adjustment) clockwise until a green raster is obtained.
11. Check the blue colour purity by turning R861 (green adjustment) fully counterclockwise and R868 (blue adjustment) clockwise until a blue raster is obtained.
12. Corrections, if required, can be made by slightly readjusting the colour purity rings "A" and/or by slightly moving the deflection unit.
13. Firmly tighten fixing screw "C".
14. Adjust SW501 on U1658 to obtain correct vertical centring.
15. Readjust the picture tube cut off.
Readjust the grey scale.
16. Proceed to the static and next the dynamic convergence adjustment.

II STATIC CONVERGENCE, see Fig. 5

1. Tune in a cross-hatch pattern and allow the set to warm up for 15 minutes.
2. Turn the four-pole rings with tags "B" until the red and blue cross-hatch patterns converge at the centre of the screen.
3. Turn the six-pole rings with tags "D" until the green cross-hatch pattern and the red and blue pattern converge at the centre of the screen.

III DYNAMIC CONVERGENCE

Remark:

The dynamic convergence is achieved by vertical and horizontal tilting of the deflection unit. To secure the right position of the deflection unit, three rubber wedges are fitted between the glass of the picture tube cone and the deflection unit, as shown in Figs. 6d of 7 d. Two wedge thicknesses are available, one 7 mm thick, code 4822 462 40356, the other 11 mm thick, code 4822 462 40357.

1. First check the colour purity and the static convergence.
2. Supply a cross-hatch pattern.
3. Eliminate the crossing of the central horizontal blue and red line and the crossing of the central vertical blue and red line, by vertical tilting of the deflection unit. If the position of the deflection unit is correct, then place rubber wedge ①, paper strip not removed, at the top (Fig. 6a) or at the bottom (Fig. 7a).
Fig. 6a is applicable if the deflection unit is tilted upwards and Fig. 7a if the unit is tilted downwards.
4. By horizontal tilting of the deflection unit, now both the horizontal blue and red lines in the upper and lower halves of the picture and the vertical blue and red lines on the left and right hand side of the picture are placed on top of the other.
If the position of the deflection is correct, then place the wedges ② and ③ with paper strips removed, as shown in Fig. 6b or 7b. Firmly press the adhesive sides of these wigs against the glass of the picture tube.
5. Now place wedge ④ as shown in Fig. 6c or 7c and press on the adhesive side firmly.
6. Remove wedge ①, so that the situation according to Fig. 6d or 7d occurs.

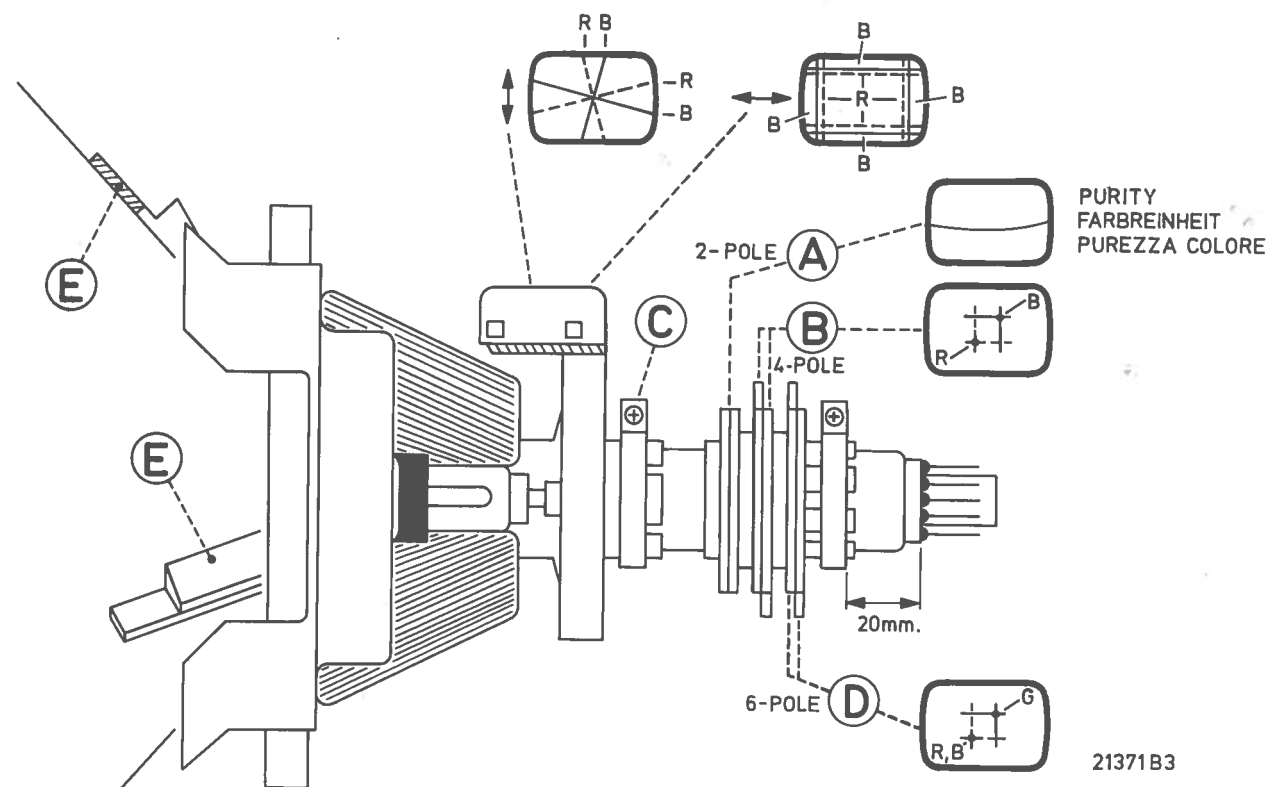
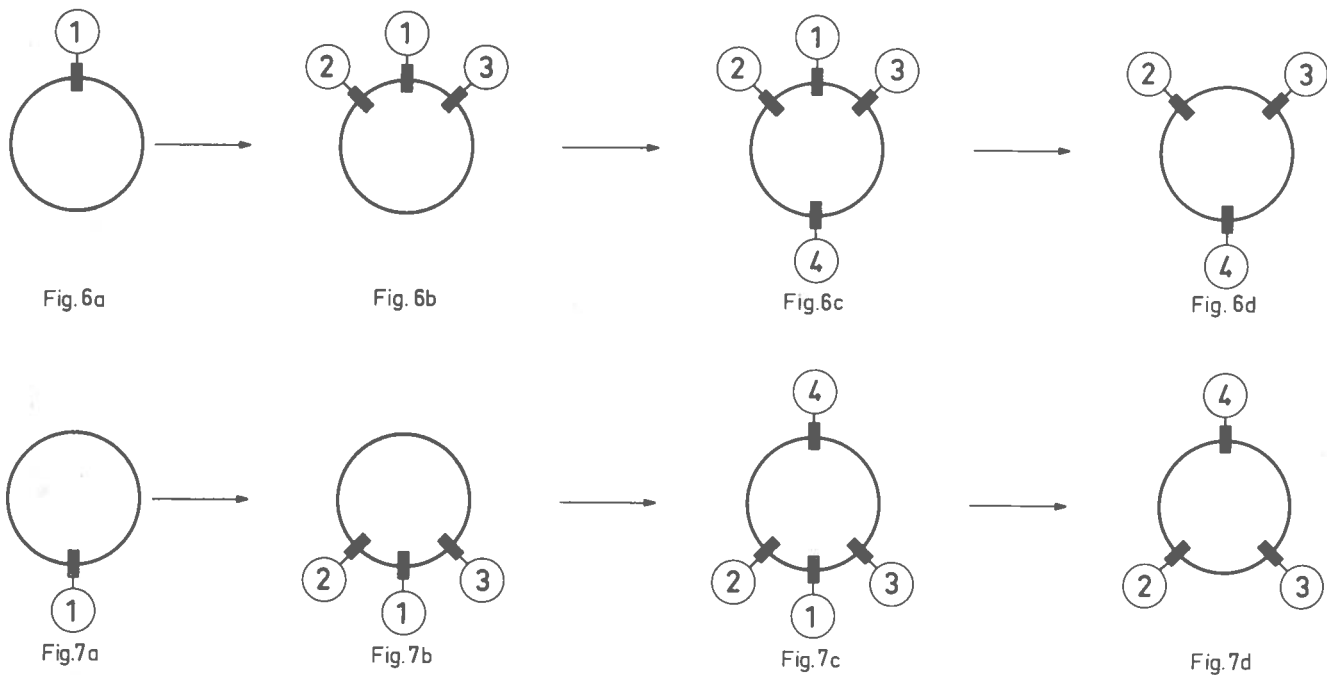


Fig. 5





ADJUSTMENT OF TV-PART

1. +115 V supply voltage

- Connect a millivoltmeter (position D.C.) between plug H₁ on U1606 and earth.
- Set contrast, brightness and saturation to minimum.
- Adjust the voltage at 115 V with R705 on U1658 at a supply voltage of 220 V~.

2. H.F. AGC

- Apply a generator signal with an amplitude of ± 3 mV.
- Set the generator into position "grey scale".
- Set the contrast to maximum and adjust the brightness so that all grey levels can be distinguished.
- By turning R222 on U1658 to the right a snowy picture will arise.
- By turning R222 to the left the picture will move and will become darker.
- Adjust R222 so that the picture does not move and the picture is not snowy.

3. Cut off point of picture tube

- Apply a generator signal and set the generator into position "grey scale".
- Connect TP403 and TP404.
Set the brightness into the mid-position.
- Turn R858 and R866 on U1606 to the left against the stop.
Turn R853, R861 and R868 on U1606 to the left against the stop.
- Set contrast and brightness to maximum.
- Turn R622 on U1658 to the right, until a horizontal line becomes just visible.
- Adjust R853, R861 and R868 so that each colour becomes just visible.
 - If after point e the horizontal line shows a blue colour, adjust R853 and R861 only.
 - If after point e the horizontal line shows a red colour, adjust R861 and R868 only.
 - If after point e the horizontal line shows a green colour, adjust R853 and R868 only.
- Turn R622 to the left, until the horizontal line disappears.
- Remove the interconnections.

4. Beam-current adjustment

- Apply a generator signal.
- Set the generator into position "grey scale".
- Set brightness and contrast to maximum.
- Connect millivoltmeter (position D.C.) between TP601 and TP602 (+ to TP602).
- Adjust R416 so that the millivoltmeter indicates 0.415 V.

5. Grey scale adjustment

- Apply a generator signal.
- Set the generator into position "grey scale".
- Adjust R858 and R866 so that the desired white colour arises.

6. Horizontal synchronisation

- Connect TP603 and TP604.
- Adjust R606 on U1658 until a stationary picture is obtained.
- Remove the connection between TP603 and TP604.

7. Vertical synchronisation

- Adjust R508 on U1658 until a stationary picture is obtained.

8. Chrominance

- Apply a generator signal with an amplitude of ± 3 mV.
- Set contrast to maximum and brightness to minimum.
- Set the saturation into the mid-position.
- Set the generator into position "MATRIX".
- Adjust T802 on U1658 so that the "Venetian blinds" effect disappears.
- Set the generator into position "DELAY".
- Adjust R811 on U1658 so, that the "Venetian blinds" effect disappears.
- Set the generator into position "PHASE".
- Adjust T801 on U1658 so that the same colours appear both at the upperside and the underside of the picture.

STEREO DECODER ALIGNMENTS

To do these alignments use is made of the colour TV pattern generator - type PM5519GX.

9. 5,5 MHz audio section

- Inject generator signal.
- Set generator to MONO.
- Connect oscilloscope to "—" lead of C358.
- Adjust L354 for maximum signal.

10. 5,74 MHz audio section

- Inject generator signal.
- Set generator to STEREO and press key "1 (L), 1+2 (R)" to "1+2 (R)" position.
- Connect oscilloscope to slider of R918.
- Set R918 to mid-position.
- Adjust L355 for maximum signal.
- Adjust R918 until the signal amplitude is 800 mV_{pp}.

11. Pilot carrier

- Inject generator signal.
- Set generator to MONO and press key "1 (L), 1+2 (R)" to "1 (L)" position.
- Connect oscilloscope to TP901.
- Adjust T901 for maximum 54,68 kHz signal.
- Adjust L901 for maximum 54,68 kHz signal (approx. 3 V_{pp}).

12. PLL frequency

- Inject generator signal.
- Set generator to MONO and press key "1 (L), 1+2 (R)" to "1+2 (R)" position.
- Within a definite zone of the adjustment range for R916 LED "Lang.2" comes on. Set R916 to the centre of this zone.

13. 117,5 Hz component

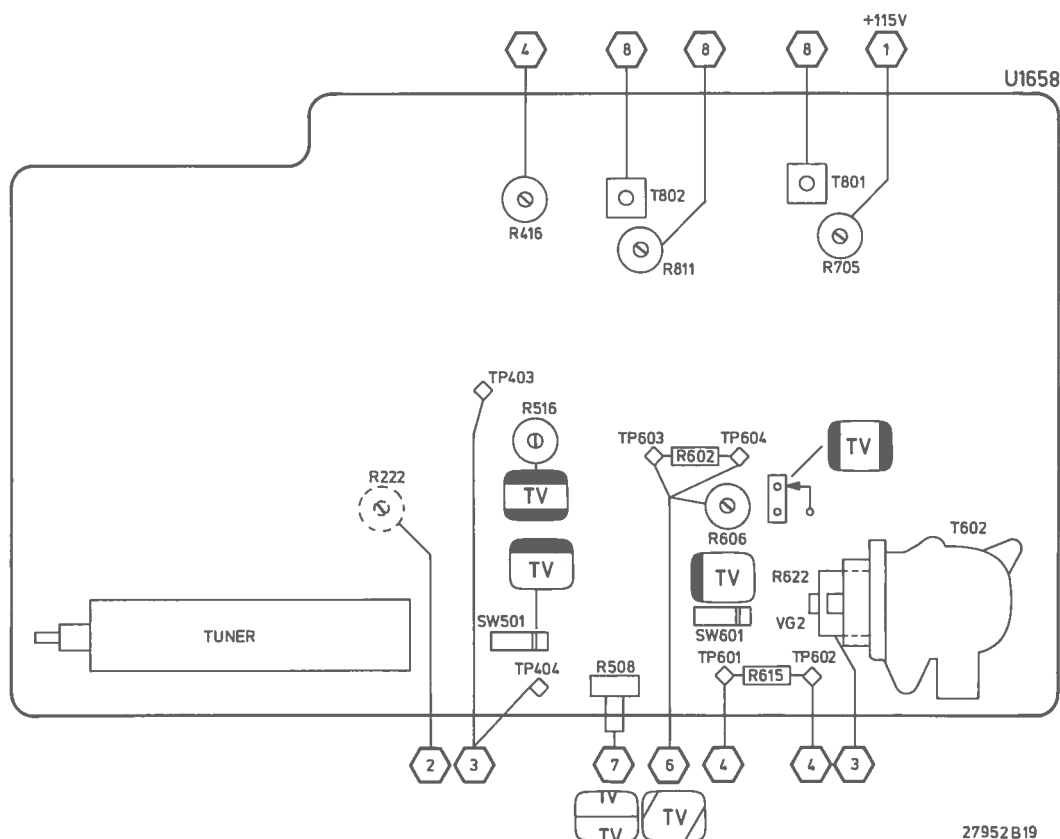
- Inject generator signal.
- Set generator to STEREO.
- Connect oscilloscope to pin 9 - I901.
- Adjust R959 for maximum signal.

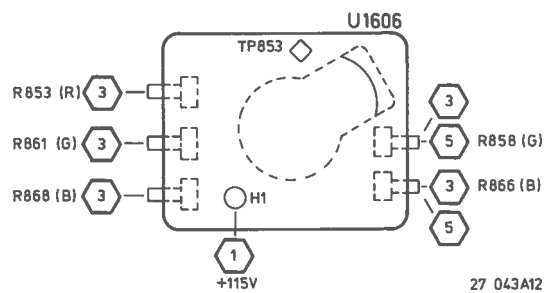
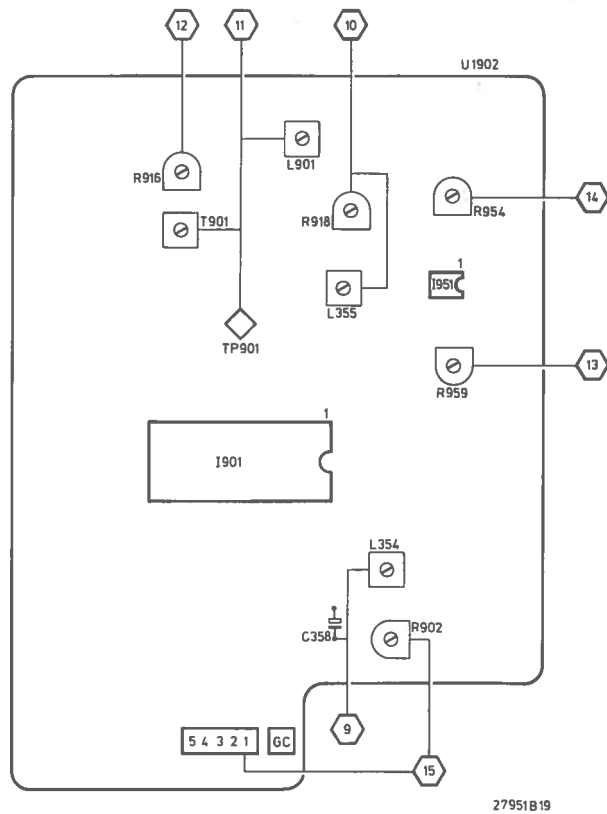
14. 274,1 Hz component

- Inject generator signal.
- Set generator to MONO and press key "1 (L), 1+2 (R)" to "1+2 (R)" position.
- Connect oscilloscope to pin 9 - I901.
- Adjust R954 for maximum signal.

15. Channel separation

- Inject generator signal.
- Set generator to STEREO and press key "1 (L), 1+2 (R)" to "1+2 (R)" position.
- Connect oscilloscope to connector GC1.
- Adjust R902 for minimum signal.





SW1	 → TPA-09				 TPA II	 TPA II
MW IF via 1 μ F - 630 V	468 kHz + 1 kHz AM	TPA-07	Min. cap.	TA-05 TA-06		
MW	519 kHz + 1 kHz AM	TPA-08	Max. cap.	TA-03		↑ Max. TPA-12
	1629 kHz + 1 kHz AM		Min. cap	CA-68		
	540 kHz + 1 kHz AM			MW Ferriet ant.		
	1600 kHz + 1 kHz AM			CA-60		
LW	143 kHz + 1 kHz AM	TPA-06	Max. cap.	TA-04		↑ Max. TPA-12
	289 kHz + 1 kHz AM		Min. cap	CA-69		
	170 kHz + 1 kHz AM			LW Ferriet ant.		
	270 kHz + 1 kHz AM			CA-59		

SW1	 → TPA-02				 TPA II	 TPA II
FM IF 3μ 3 - 50 V parallel to CA-42	10.7 MHz via 10 nF $\Delta f \pm 180$ kHz (50 kHz)	TPA-03	Min. cap.	TA-01 TA-02	TPA-04 1 TPA-04 2	
FM	87.4 MHz + 400 Hz FM	CA-01	Max. cap.	LA-04		↑ Max. TPA-04
	108 MHz + 400 Hz FM		Min. cap.	CA-27		
	88 MHz + 400 Hz AM			LA-01 LA-02 LA-03		
	108 MHz + 400 Hz FM			CA-03 CA-09 CA-16		

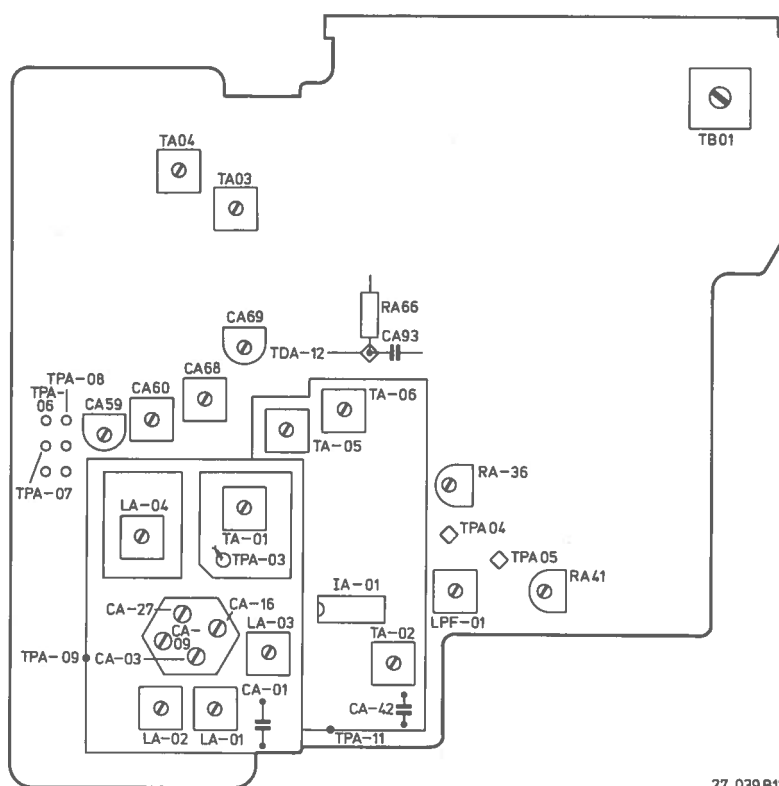
Stereo decoder

SW1	 → 10 nF → CA-01				Frequency counter
FM	100 MHz + 400 Hz FM		RA-36		TPA-05 19 kHz
FM	100 MHz + 19 kHz + 1 kHz + L		RA-41	Speaker R min.	↑
FM	100 MHz + 19 kHz + 1 kHz + R		RA-41	Speaker L min.	

↑ Repeat

1 Adjust for symmetry and maximum height of the band-pass curve.

2 Adjust for symmetry and maximum slope of the "S" curve.



RECORDER ADJUSTMENTS

Azimuth alignment, Fig. 9

Azimuth is adjusted by means of the azimuth adjust screw. An opening underneath the cassette lid provides access to this screw from the front of the apparatus. Use test cassette SBC133 (4822 397 30039) to do this alignment.

In START mode the signal on either of the Line Out sockets L and R (NC2 and NC3) should be adjusted for maximum voltage.

Bias adjustment

Adjust RB80 until the bias voltage for the LEFT channel - appearing on TPB01 - is at 8,0 mV~.

Adjust RB81 until the bias voltage for the RIGHT channel - appearing on TPB02 - is at 8,0 mV~.

Bias frequency

Adjust TB01 for a bias frequency reading of 61,7 kHz with the RIF switch set to position 1.

With the RIF switch to position 2, the bias frequency should read 60 kHz $\pm$ 300 Hz.

With the RIF switch to position 3, the bias frequency should read 55 kHz $\pm$ 600 Hz.

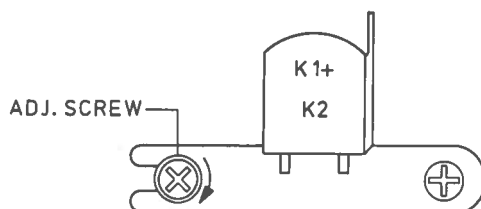


Fig. 9

ELECTRICAL PARTS TV

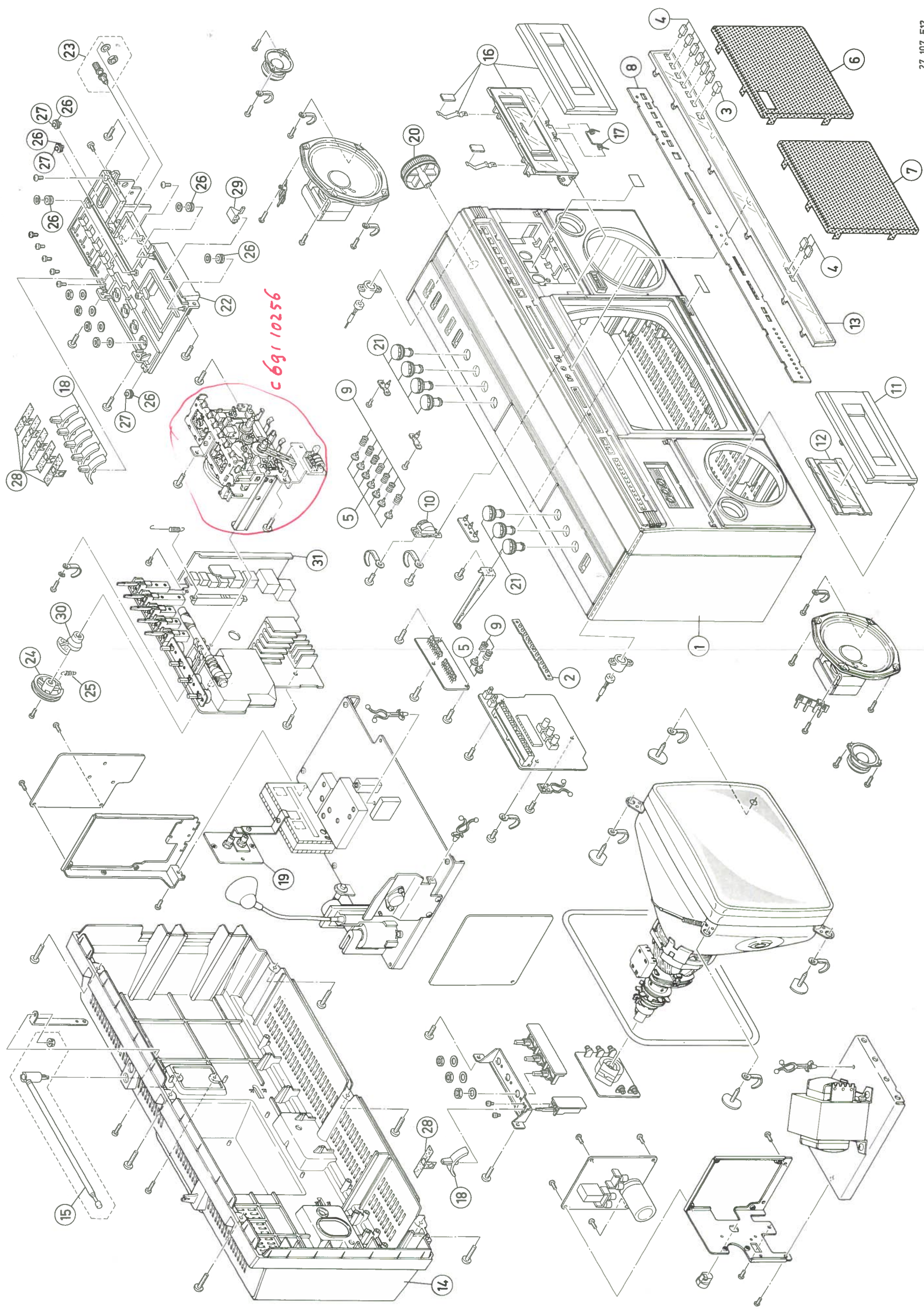
			
IX0018	4822 209 80594	C234	0,22 μ F-50V 4822 124 20979
IX0037	4822 209 80595	C263	0,01 μ F-50 V 4822 124 21178
IX0050	4822 209 80596	C507	3,3 μ F-35 V 4822 124 10245
IX0062	4822 209 80743	C511	15 μ F-16 V 5322 124 10017
IX0064	4822 209 80705	C602	6,8 μ F-50 V 4822 122 31429
IX0065	4822 209 80706	C606	7,2 nF-100 V 4822 121 41504
IX0118	4822 209 80707	C611	10 nF-500 V 4822 121 41134
IX0129	4822 209 80698	C612	10 nF-500 V 4822 121 41134
IX0133	4822 209 80699	C618	2,7 nF-1,6 kV 4822 121 41503
IX0134	4822 209 80701	C619	560 pF-3,15 kV 4822 121 41272
IX0135	4822 209 80702	C702	0,22 μ F-50 V 4822 124 20979
IX0228	4822 209 81116	C707	47 μ F-160 V 4822 121 50821
TC4001	5322 209 14045	C711	1 nF-1 kV 4822 122 31619
TC4081	5322 209 14054	C713	10 nF-500 V 4822 121 41134
			
2SA1015G	4822 130 41504	R205	22 Ω 4822 111 30002
2SA1015Y	4822 130 41505	R206	22 Ω 4822 111 30002
2SC1627Y	4822 130 41507	R252	22 Ω 4822 111 30002
2SC1815G	4822 130 41513	R353	22 Ω 4822 111 30002
2SC1815Y	4822 130 41514	R901	33 Ω 4822 113 90075
2SC1827	4822 130 41508	R937	33 Ω 4822 113 90075
2SC2199	4822 130 41509		
2SC2216	4822 130 41512	R22	4,7 k Ω 4822 101 10251
2SC2229	4822 130 41511	R416	100 k Ω 4822 101 10256
2SD880	4822 130 41592	R452	10 k Ω 4822 100 10413
2SD897A	4822 130 41516	R453	5 k Ω 4822 100 10412
		R454	10 k Ω 4822 100 10413
IN34A	4822 130 30191	R508	5 k Ω 4822 100 10416
IN60	4822 130 31012	R516	100 Ω 4822 101 10258
DX0048	4822 130 31286	R606	4,7 k Ω 4822 101 10251
DX0055	4822 130 31287	R616	12 Ω - 2 W 4822 116 60133
DX0086	4822 130 31289	R640	22 Ω - 1 W 4822 116 60132
DX0101	4822 130 31291	R705	1 k Ω 4822 101 10253
DX0115	4822 130 31293	R811	1 k Ω 4822 100 10407
DX0117	4822 130 31366	R853	3 k Ω 4822 100 10411
DX0124	4822 130 31367	R858	300 Ω 4822 100 10409
DX0125	4822 130 31295	R861	3 k Ω 4822 100 10411
DX0142	4822 130 31626	R866	300 Ω 4822 100 10409
DX0151	4822 130 31527	R868	3 k Ω 4822 100 10411
03P4MG	(Thyristor) 4822 130 20089	R902	5 k Ω 4822 100 10465
EX0048	6,2 V 4822 130 31299	R916	100 k Ω 4822 100 10466
EX0051	24 V 4822 130 31301	R918	5 k Ω 4822 100 10465
EX0069	24 V 4822 130 31302	R1044	12 k Ω - 2 W 4822 116 55147

					
Picture tube	VB270ACB22Y-S	4822 131 20067			
					
D1051...1062	PX0010	4822 130 31528			
					
CF201		4822 242 70404	T702		4822 140 10187
L201		4822 157 51371	FB751		4822 526 10164
CF202		4822 242 70339	L751		4822 158 20396
L202		4822 157 51364	T751		4822 145 30248
L203		4822 154 50175	FB752		4822 526 10205
L204		4822 154 50176	FB753		4822 526 10205
L205		4822 157 51267	DL801		4822 320 40052
L206		4822 157 51089	L801		4822 157 51265
L207		4822 157 51264	T801		4822 154 10034
L208		4822 157 51261	X801		4822 242 70337
L251		4822 157 51023	T802		4822 154 10035
L252		4822 157 51365	L803		4822 157 51277
CF301		4822 242 70449	L901		4822 157 51363
L301		4822 157 51266	T901		4822 158 20401
CF302		4822 242 70405	FB1001		4822 526 10205
L302,		4822 157 51265	L1002		4822 157 51261
L303		4822 157 51265	U1212		4822 150 10139
L304		4822 158 20364			
L305		4822 158 20364			
DL401		4822 320 40053	F751	T800 mA	4822 253 30019
L401		4822 157 51267	F752	T5A	4822 253 30029
FB601		4822 526 10164			
L601		4822 157 51087	SW501		4822 276 10787
T601		4822 142 40262	SW601		4822 276 10787
FB602		4822 526 10205	SW901		4822 277 30676
L602		4822 157 51086	SW1001		4822 276 10919
T602		4822 140 10189	SW1002		4822 276 10919
FB603		4822 526 10164	SW1003		4822 276 10921
L604		4822 157 51262	SW1004		4822 276 10921
L605		4822 157 51262	SW1005		4822 276 10921
L606		4822 157 51275	-Miscellaneous-		
L651		4822 157 51273	DC cord		4822 321 20361
L652		4822 157 51276	Spark gaps	SG850 - 855	4822 252 60086
FB701		4822 526 10164	Socket DC		4822 265 30205
L701		4822 157 51274	Channel selector		4822 210 40217
T701		4822 140 10188	Loudspeaker	SP3,4	4822 240 70075
			Loudspeaker	SP1,2	4822 240 50184
			Multipole		4822 526 10165
			CRT socket		4822 255 70185

ELECTRICAL PARTS RADIO-RECORDER

					
AN7145M		4822 209 80759	2SC930		4822 130 41575
AN7410		4822 209 80683	2SC2274		4822 130 41571
HA11251		4822 209 80529	2SD613		4822 130 41577
LA3161		4822 209 80761	2SK41		4822 130 41706
LB1405		4822 209 81021			
			IS188		4822 130 31374
2SA608		4822 130 41568	IS553		4822 130 31375
2SB632		4822 130 41569	DS135		4822 130 31533
2SC536A		4822 130 41572	DS442		4822 130 31371
2SC536G		4822 130 40928	GZA13X		4822 130 31534
2SC536H		4822 130 41573			

					
DA02,04	SLP-244	4822 130 31238	LC02		4822 157 51291
DA03	SLP-144	4822 130 31241	TA02		4822 153 50225
DB04	SLP-144	4822 130 31241	CF03		4822 242 70353
DB09	SLP-244	4822 130 31238	LA03		4822 156 30829
DC07,08		4822 130 31535	LB03		4822 157 51141
			LC03		4822 157 51289
CA11	5 pF - 50 V	4822 122 40279	TA03		4822 156 10576
CA17	30 pF - 50 V	4822 122 40307	CF04		4822 153 60107
CA18	7 pF - 50 V	4822 122 40281	LA04		4822 156 20988
CA25	5 pF - 50 V	4822 122 40279	LB04		4822 157 51141
CA29	7 pF - 50 V	4822 122 40278	LC04		4822 157 51289
CA59		4822 125 50163	TA04		4822 156 10577
CA60		4822 125 50162	CF05		4822 153 60107
CA62	5 pF - 50 V	4822 122 40279	LA05		4822 157 51141
CA66	300 pF - 50 V		LB05		4822 157 51292
CA68		4822 125 50162	LC05		4822 157 51293
CA69		4822 125 50163	TA05		4822 153 10331
CB35	0,22 μ F - 50 V	4822 124 20979	LA06		4822 157 51144
CB36	0,22 μ F - 50 V	4822 124 20979	LB06		4822 157 51292
CB55	2 nF - 50 V	4822 122 31623	LC06		4822 157 51293
CB56	2 nF - 50 V	4822 122 31623	TA06		4822 153 10332
CB59	100 nF - 50 V	4822 122 31621	LA07		4822 157 51143
CB60	100 nF - 50 V	4822 122 31621	LC07		4822 157 51293
CB61	15 nF - 50 V	4822 121 41303	LA08		4822 158 30198
CC17	15 nF - 50 V	4822 122 31622	LC08		4822 157 51293
CC18	15 nF - 50 V	4822 122 31622	LA09		4822 157 51289
CC21	100 nF - 50 V	4822 122 31621	LA10		4822 157 51289
CC22	18 nF - 50 V	4822 122 31621	LA11		4822 157 51289
CA2,8,15,26		4822 125 40045	LA12		4822 157 51289
 			LA13		4822 158 30198
RA36	10 k Ω	4822 100 10035	LA16		4822 157 51289
RA41	50 k Ω	4822 100 10079	LA17		4822 157 51289
RB80	100 k Ω	4822 100 10052	LA18		4822 157 51288
RB81	100 k Ω	4822 100 10052	LA19		4822 157 51288
RC21,RC22	50 k Ω	4822 102 10178	LA20		4822 157 51288
RC23,RC24	50 k Ω	4822 102 10178	LA21		4822 157 51288
RC29	50 k Ω	4822 101 20617	LA22		4822 157 51288
RC31,32	50 k Ω	4822 102 10179	LA23		4822 157 51288
RC69	20 k Ω	4822 100 10418			
RC70	20 k Ω	4822 100 10418	FC01	T 1,6 A	4822 253 30024
RC80	10 Ω - 1/4 W	4822 111 30114	FC02	T 2 A	4822 282 40208
RC82	10 Ω - 1/2 W	4822 111 50296			
			SW1		4822 277 20716
CF01		4822 242 70407	SW2		4822 277 20717
FBA01		4822 158 20402	SW3		4822 277 10602
LA01		4822 156 10575	SW4		4822 277 10603
LB01		4822 157 51287	SW5		4822 277 10605
LC01		4822 157 51291	SW6		4822 277 10604
LPF01		4822 242 70408	SW10		4822 276 10817
TA01		4822 156 20986	-Miscellaneous-		
TB01		4822 156 20987	Spring SW2		4822 492 31917
CF02		4822 242 70407	Socket loudspeaker		4822 267 40386
FBA02		4822 158 10523	Microphone		4822 242 30089
LA02		4822 156 30829	<i>Blinds roller</i>		
LB02		4822 157 51287	<i>4822 267 40384</i>		

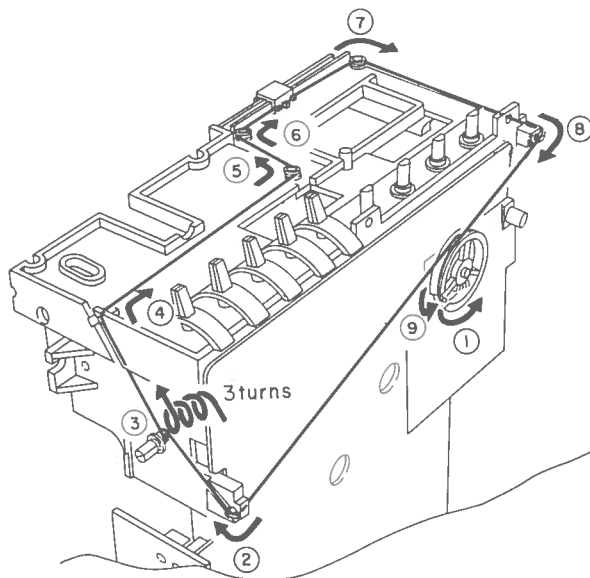


1	4822 430 10116	11	4822 256 90351	21	4822 413 31004
2	4822 381 10576	12	4822 459 20234	22	4822 404 30505
3	4822 410 22609	13	4822 381 10577	23	4822 535 70593
4	4822 410 22611	14	4822 438 20127	24	4822 528 80863
5	4822 410 22612	15	4822 158 60435	25	4822 492 31916
6	4822 458 20086	16	4822 443 60847	26	4822 528 80826
7	4822 458 20087	17	4822 492 51325	27	4822 535 91242
8	4822 454 10969	18	4822 413 31005	28	4822 462 40464
9	4822 492 51401	19	4822 212 21252	29	4822 450 80727
10	4822 466 40126	20	4822 413 51154	30	4822 528 80871
				31	4822 267 20187

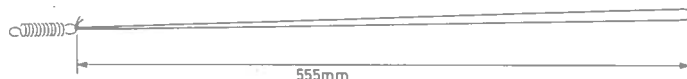
PARTSLIST RECORDER

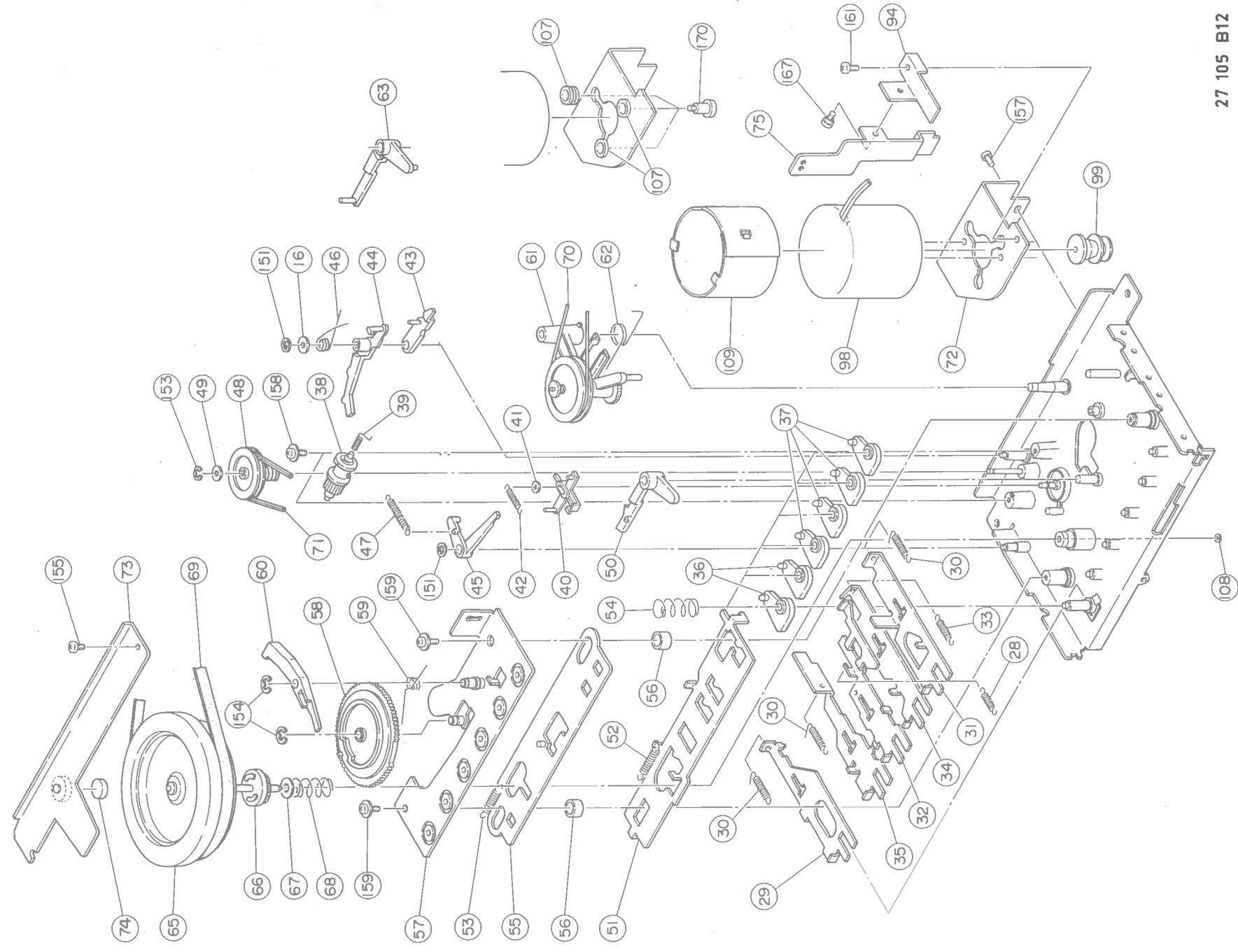
2	4822 403 30354	30	4822 492 40935	60	4822 403 30348	96	4822 349 5
4	4822 403 30362	31	4822 403 30345	61	4822 522 10227	97	4822 358 1
5	4822 403 30346	32	4822 403 30357	62	4822 492 40942	98	4822 361 1
6	4822 522 10198	33	4822 492 40936	65	4822 528 60158	99	4822 528 5
7	4822 462 40456	34	4822 403 30355	66	4822 522 31391	100	4822 249 1
8	4822 492 31918	35	4822 403 30356	68	4822 492 51407	101	4822 249 2
9	4822 466 91025	36	4822 403 30349	69	4822 358 10072	102	4822 403 3
10	4822 535 70626	37	4822 403 30359	70	4822 358 10074	103	4822 492 4
11	4822 492 40945	38	4822 535 70627	71	4822 358 10073	104	4822 278 9
12	4822 492 51402	39	4822 492 62448	72	4822 403 30338	105	4822 271 3
13	4822 492 40937	40	4822 403 30342	74	4822 466 80808	106	4822 278 9
14	4822 520 40146	42	4822 492 62446	77	4822 403 30361	107	4822 532 5
15	4822 520 10471	43	4822 403 30351	78	4822 403 10207	160	4822 502 1
17	4822 492 40941	44	4822 403 30352	79	4822 466 80809	170	4822 502 1
18	4822 403 30343	45	4822 403 30353	80	4822 492 51406		
19	4822 528 10431	46	4822 492 31921	81	4822 492 62447		
21	4822 492 51403	47	4822 535 70628	82	4822 403 30358		
22	4822 528 10432	48	4822 522 31389	83	4822 403 10208		
23	4822 492 51404	50	4822 403 30347	84	4822 403 51564		
24	4822 532 60764	51	4822 466 80811	85	4822 403 51565		
25	4822 466 91026	52	4822 492 31922	86	4822 403 51563		
26	4822 466 80807	53	4822 492 31923	87	4822 492 31919		
27	4822 492 40939	54	4822 492 51405	88	4822 403 10209		
28	4822 492 40944	58	4822 522 31392	90	4822 403 30341		
29	4822 403 30344	59	4822 492 40938	91	4822 492 40946		

Dial Cord Stringing

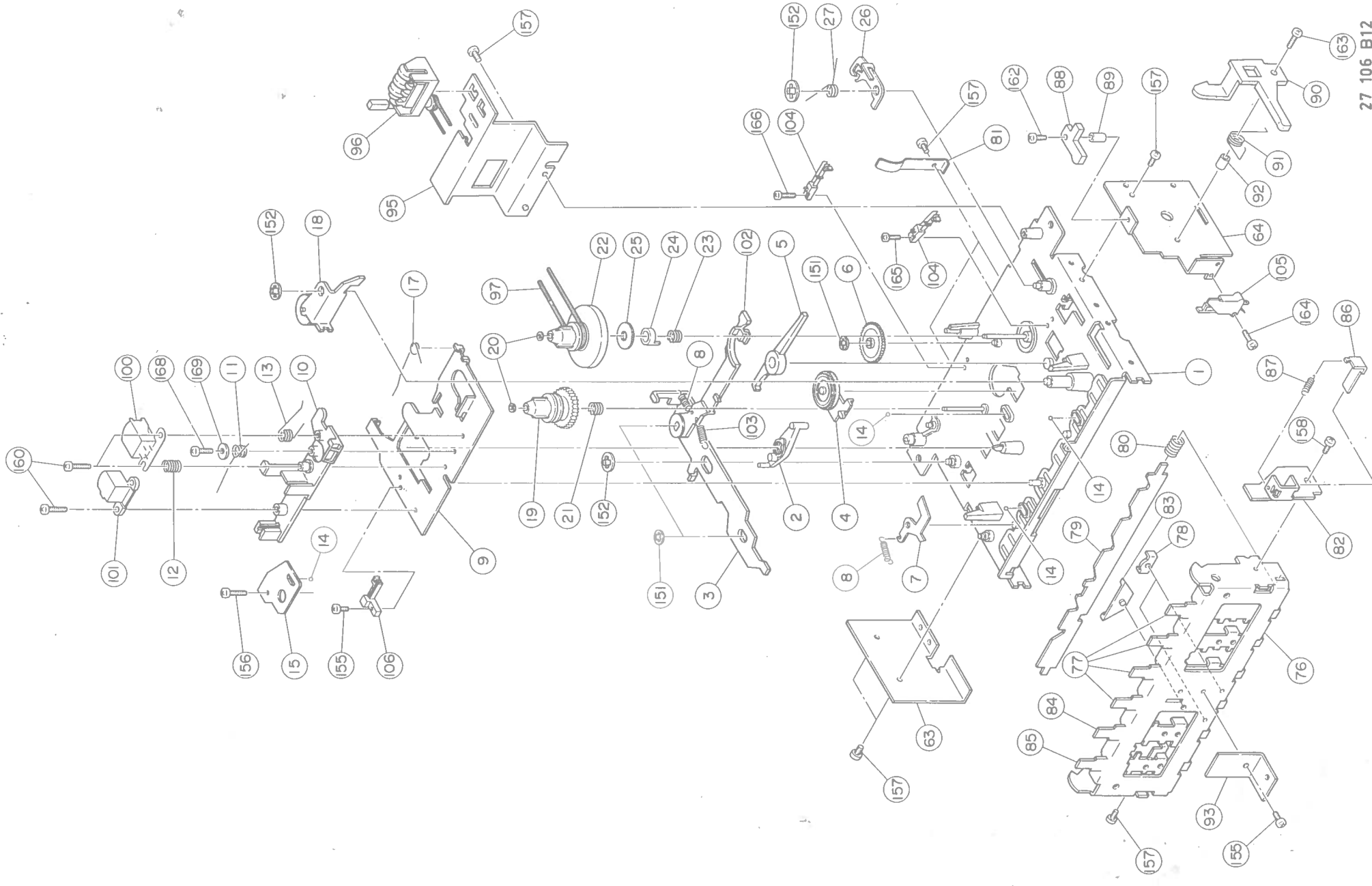


CAUTION: AFTER SETTING THE STRING, CHECK THAT ITS TOTAL LENGTH IS 555 mm.





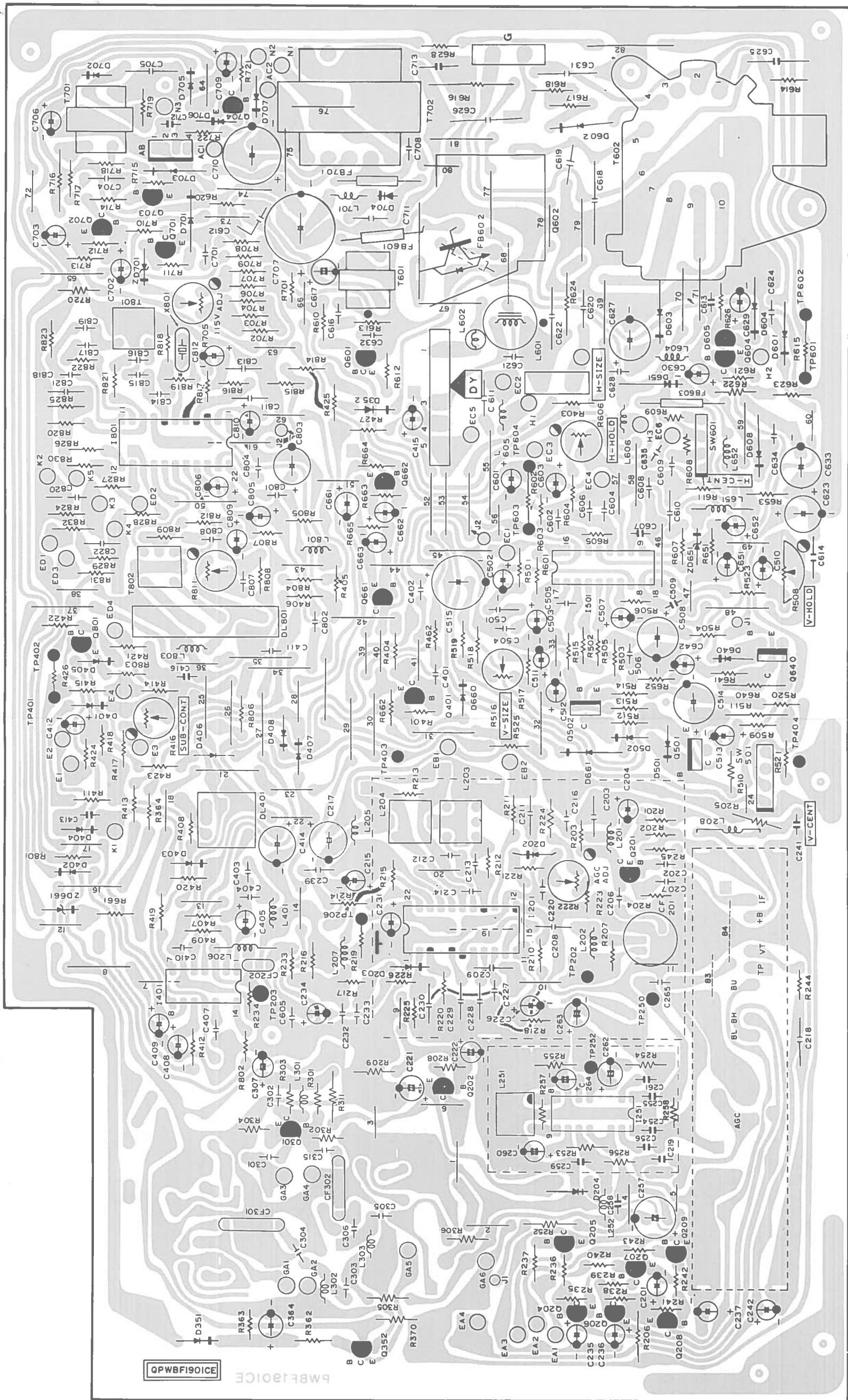
27 105 B12



27 106 B12

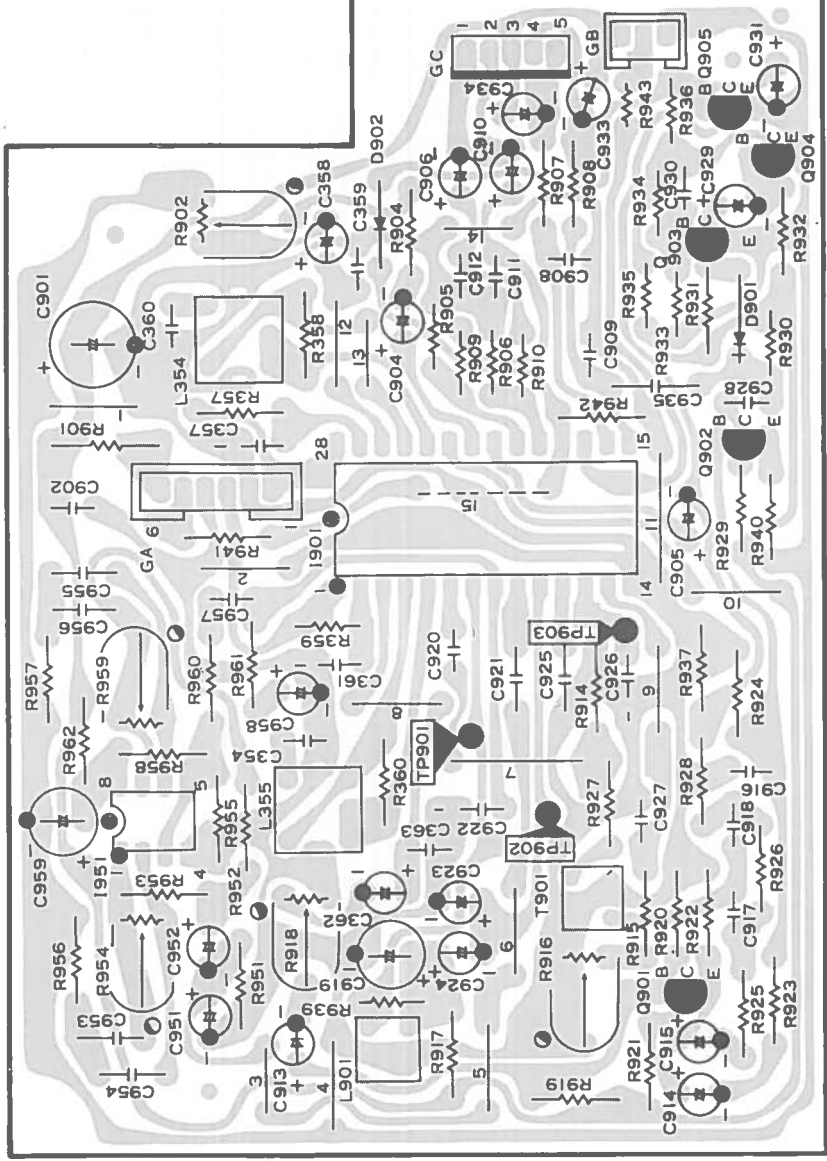
CS 78 147

Q-T-L	Q352.L302	Q204...209.L303.L252	Q301.L251.301.Q202	L207.206.202.401	Q201.L201.208.203...205	Q501	Q502.401	803.8001.640.661	T802.L801.651	Q662.L652.605.606	Q601.604.L604.601.602.L701	T602.701.702.Q704																			
D-I	D351	D204	1251	1401.D203.1201.ZD661	D202.402...404	D661.501.406	408.502.401.660.405.640	1501	ZD651	D608.1801	D352.651	D601.603...605	ZD701	D701.704	D703	D602.705...707.702															
C	364	303...306	301	302	407...409	410	405	404	403	414	413	412	416	411	802	807	822	808	809	820.801.803...806	810	821.811...819	701...703	707.612	704.710	706	712	709.705			
C	235...237.242.201	257.258.210	259	219	254	256	261	264	218	206	207.202	203	204	513	514	642	506	507...510	551	505	402	661...663.601...604.606.415	611	632	620...622	616	617	619	708	626	631.713
C																															625

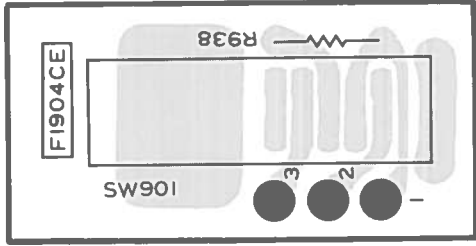


R	363	301.311.209.208.802	412	234	233.216	409.407.419.661	420.801	408	364.411.423	413	418.424.806	426.803.421	422	811.807...	809.812	827	832	824	826	825.814...	823	720	701...	713	620	714	718	722	719	721		
R	362.370.305	235...237.306.252	253	257	302	304.302.255.305.225	226	217...220	210	221...223.203	211...215	224	525	401.662	515...518.462.404	406	804.501	501	605.805	663	665.427.606	425	403	612	613.610.624	617	618	616	628			
R	206	238...242	243	256	258	254	204	245	202	201	205	521	509	514.520.640.652.641.502...	506	508	523	607.651	653.611	608	609	621...623	615	626					614			
																														27	941	D12

Q-L	L901	Q901	T901	L355	Q902	L354	Q903	Q904	Q905
D-I			1951		1901		D902		
C	951...954, 919	922...924, 363, 959, 354, 958, 361	955...957, 962, 357	901, 904	958...960, 906				
C	913...915	362, 916...918	925...927, 921, 920	905	928, 935	908...912	929...931	933, 934	

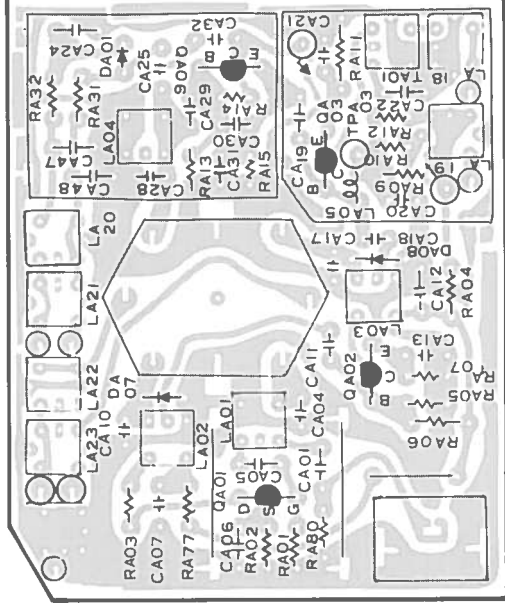


R	939	951...956	360	957...962, 359	941	901	357	358, 909, 910, 904...908, 902	
R	915...923, 925	928	924, 937	940, 929	942	930...935			27 938 C12

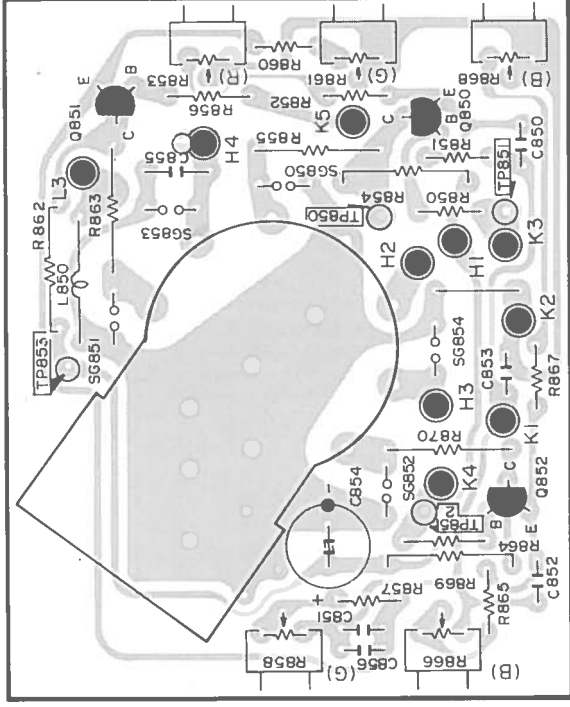


27 936 A12

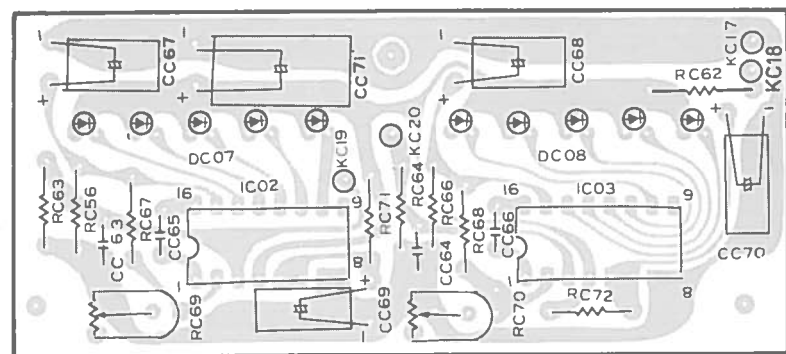
Radio Tuner Circuit



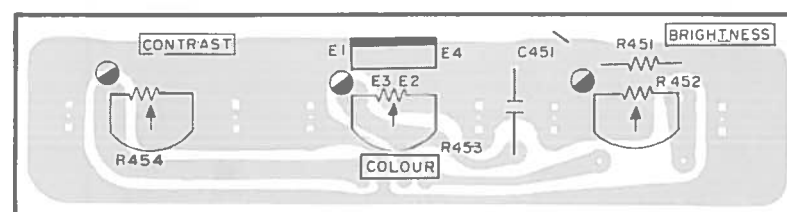
27 098A12



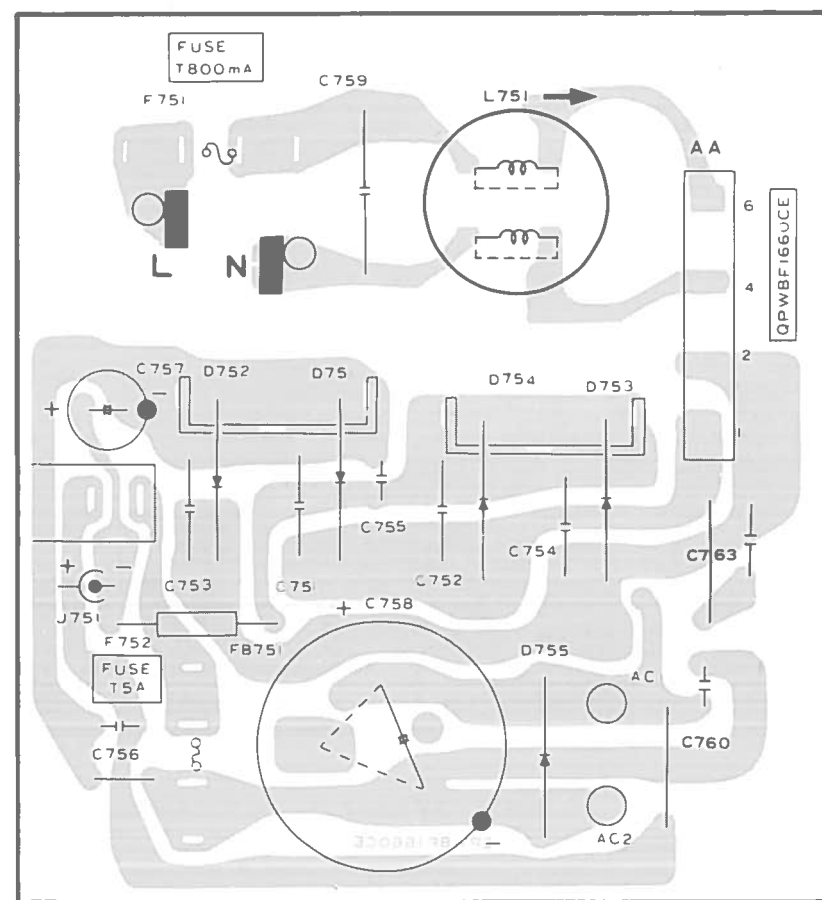
27 100A12



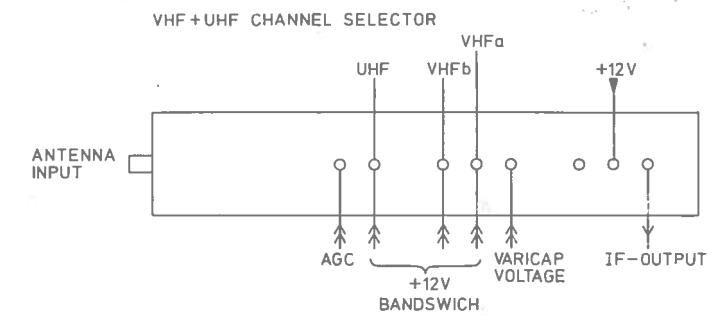
27 099A12



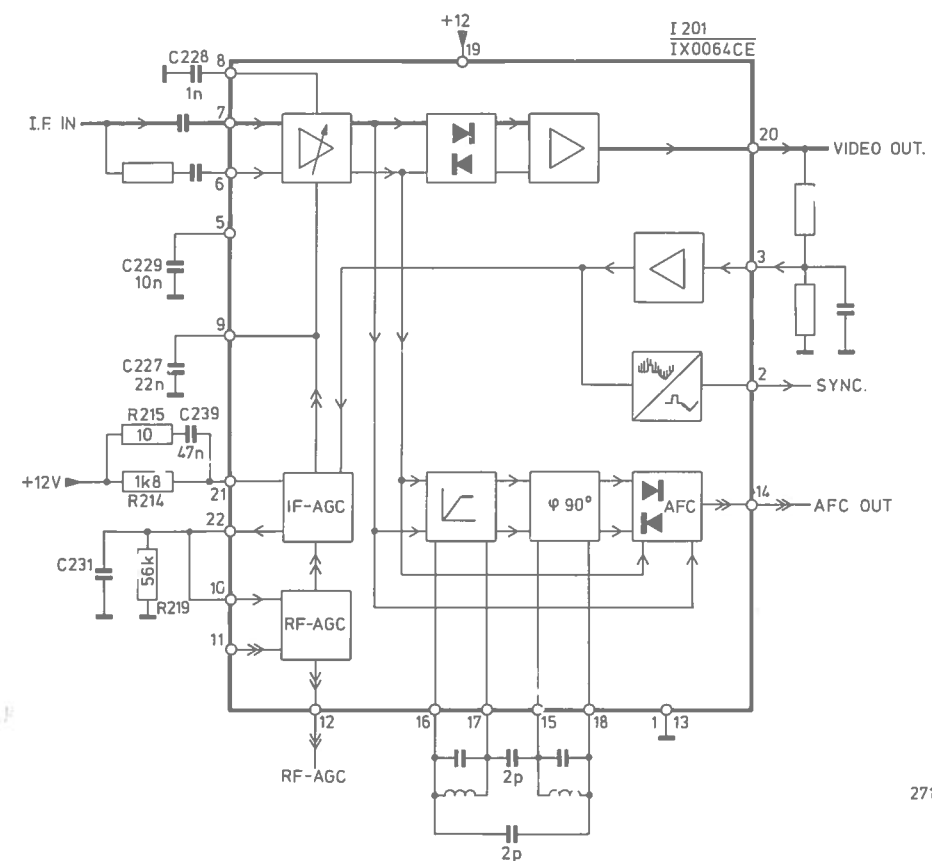
27 097A12



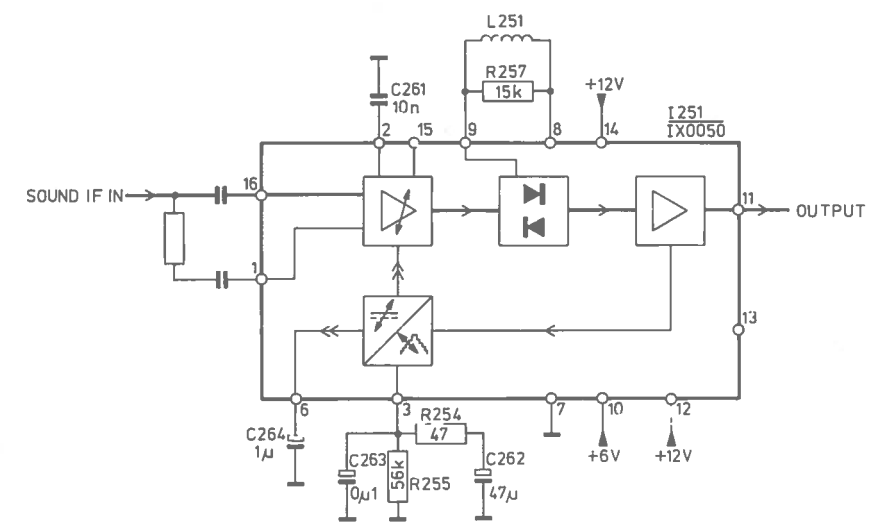
27 937 B12



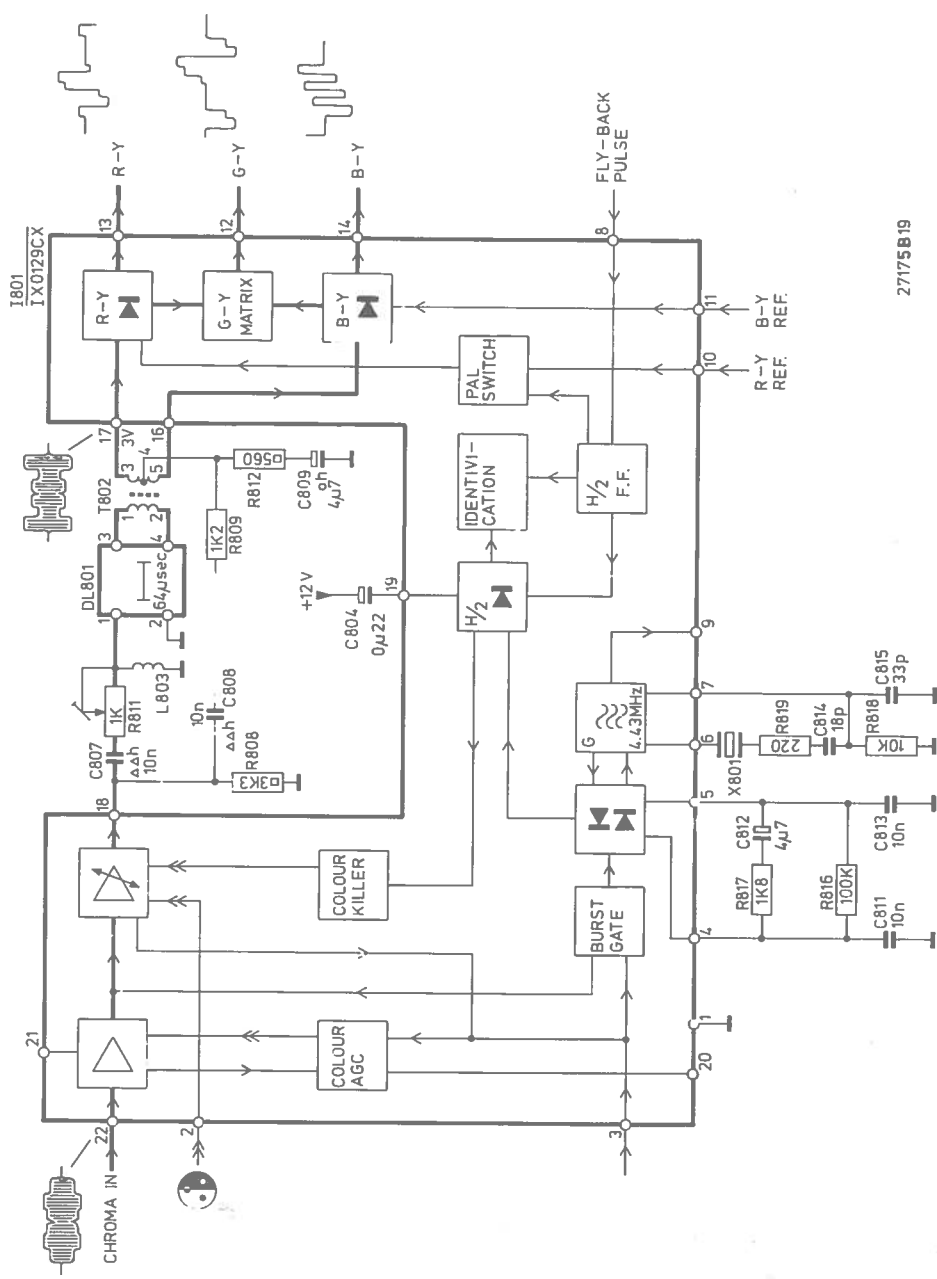
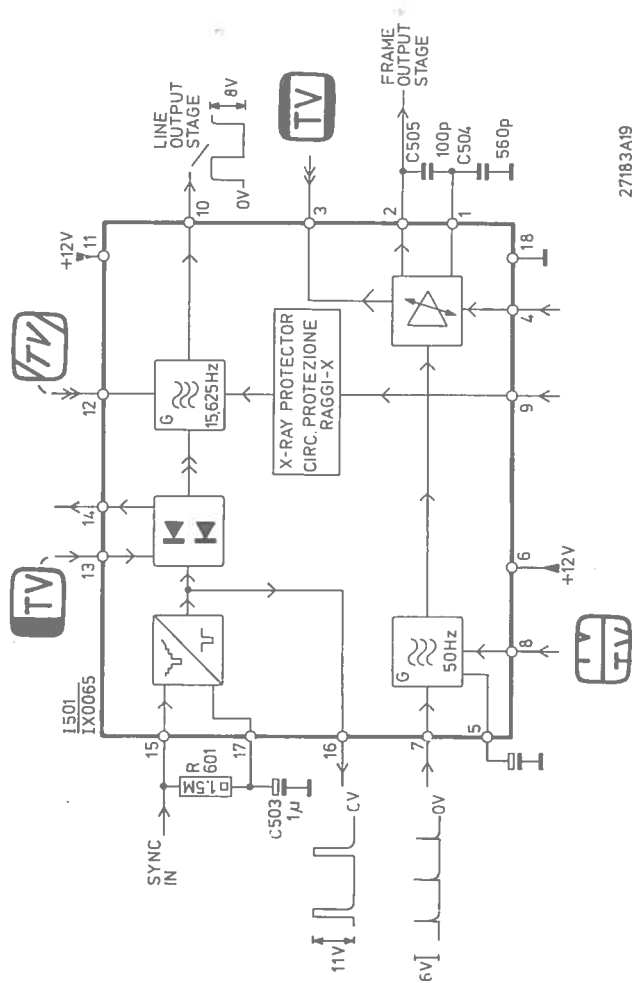
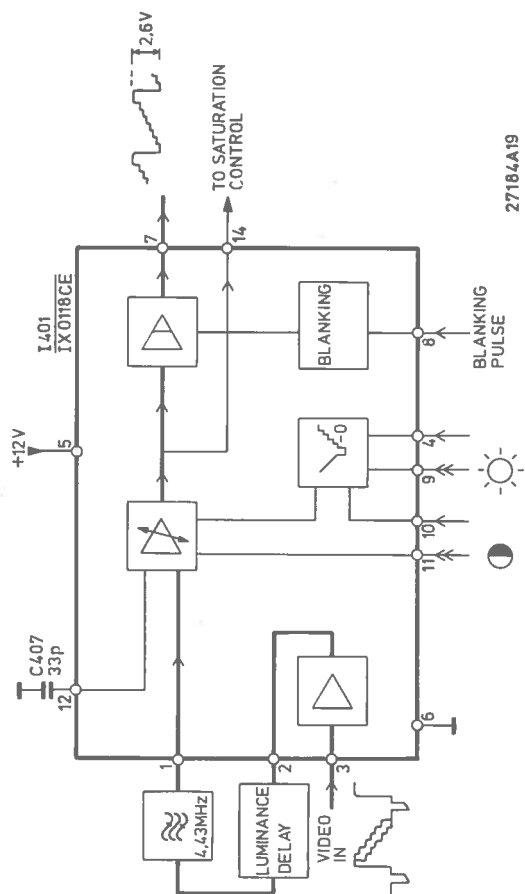
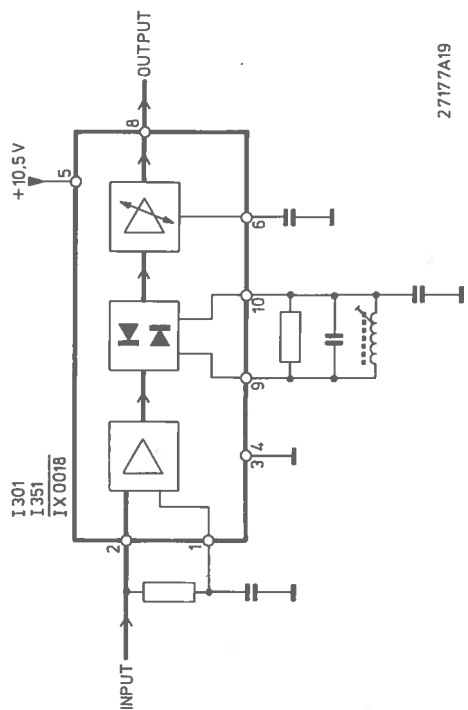
27179A19

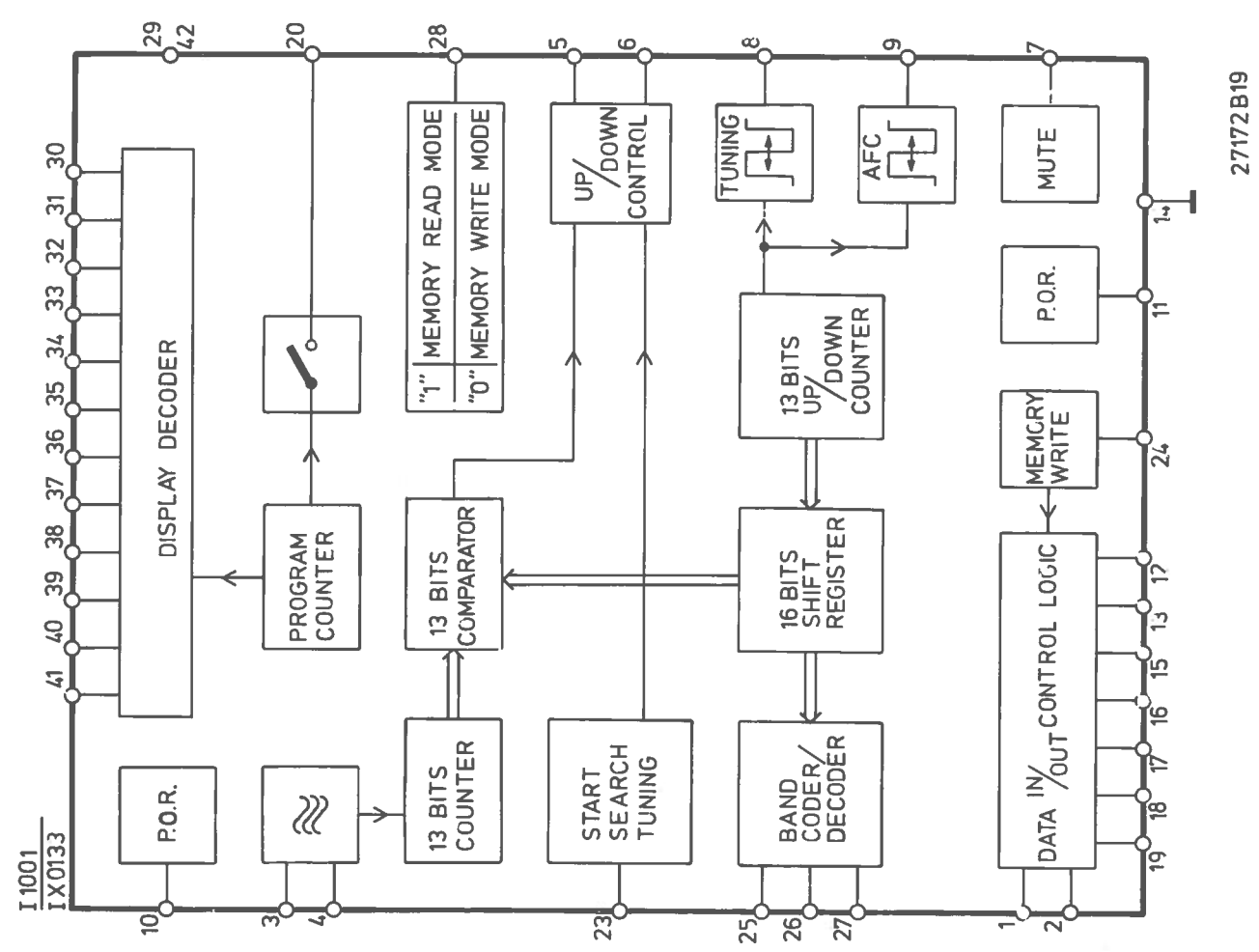
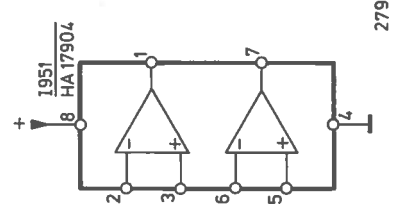
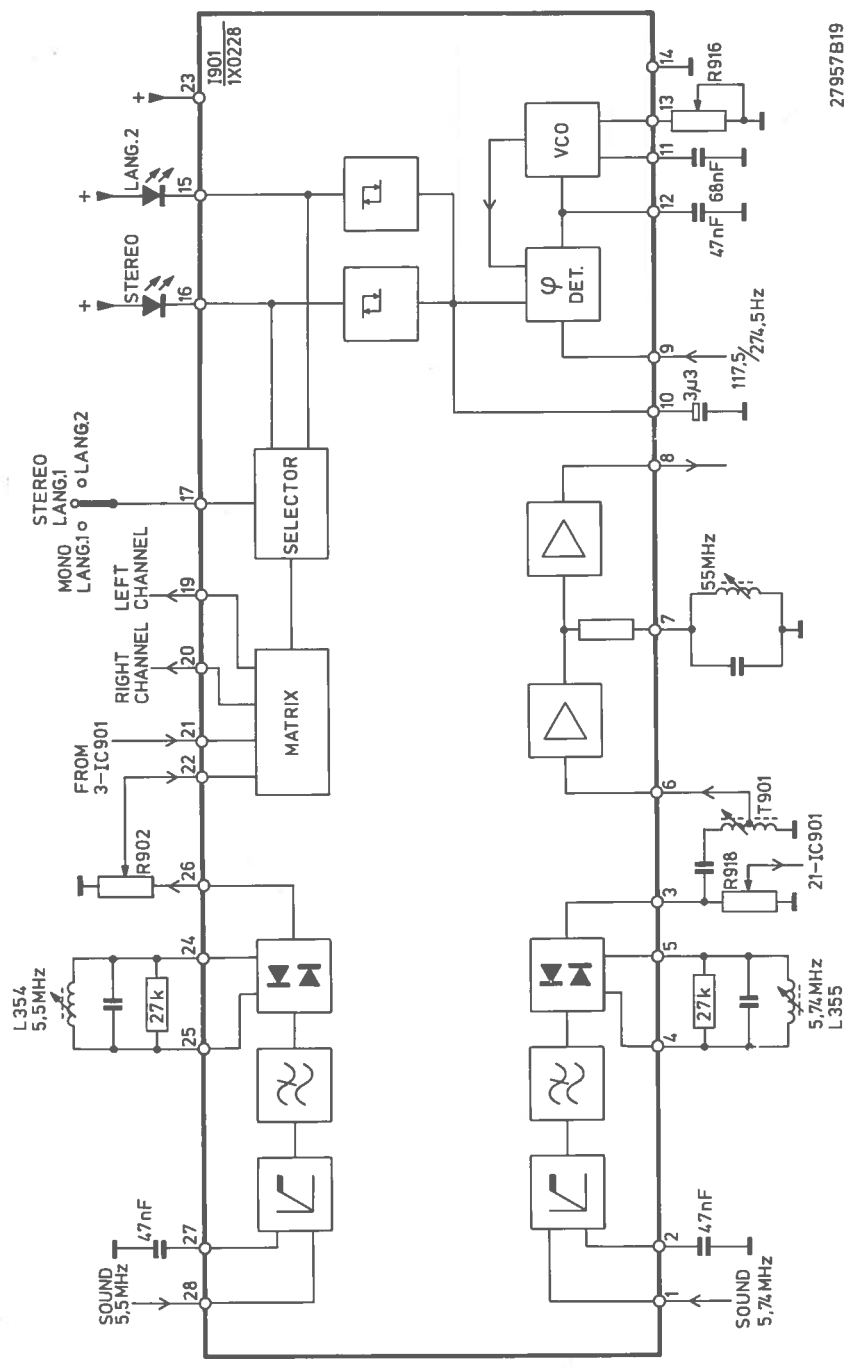


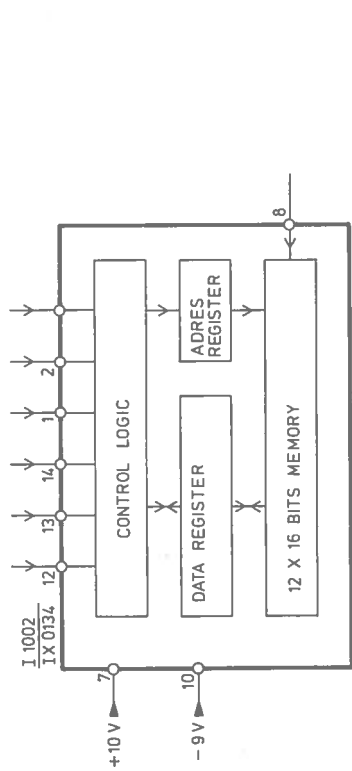
27174B19



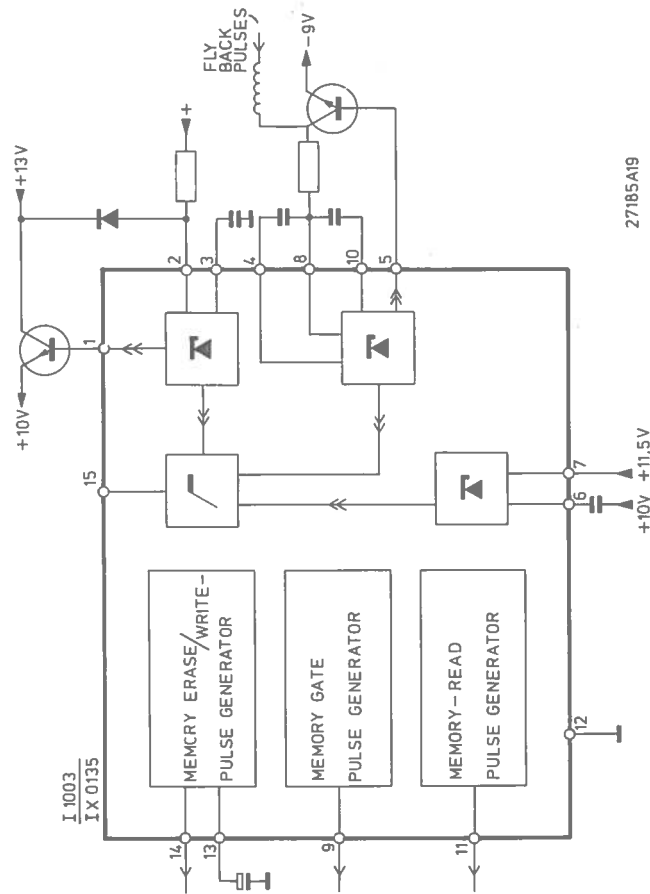
27286A19



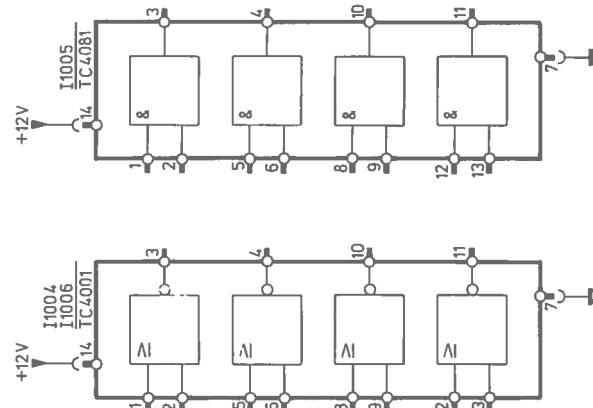




27186A19



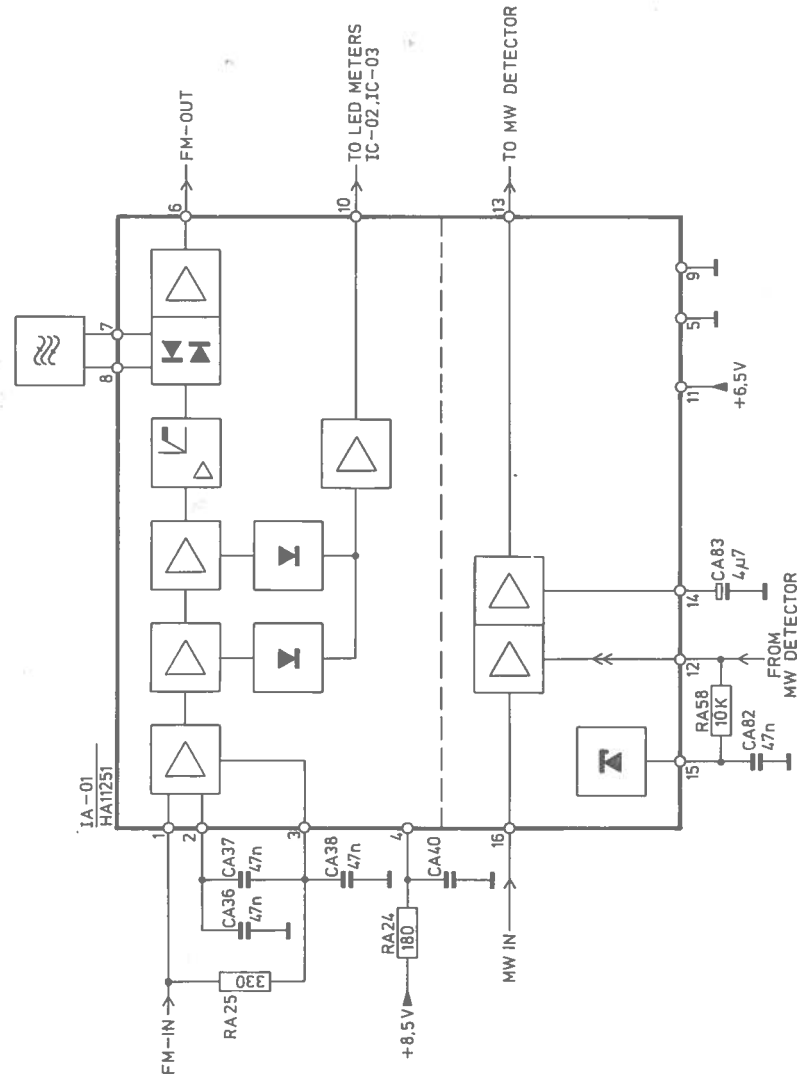
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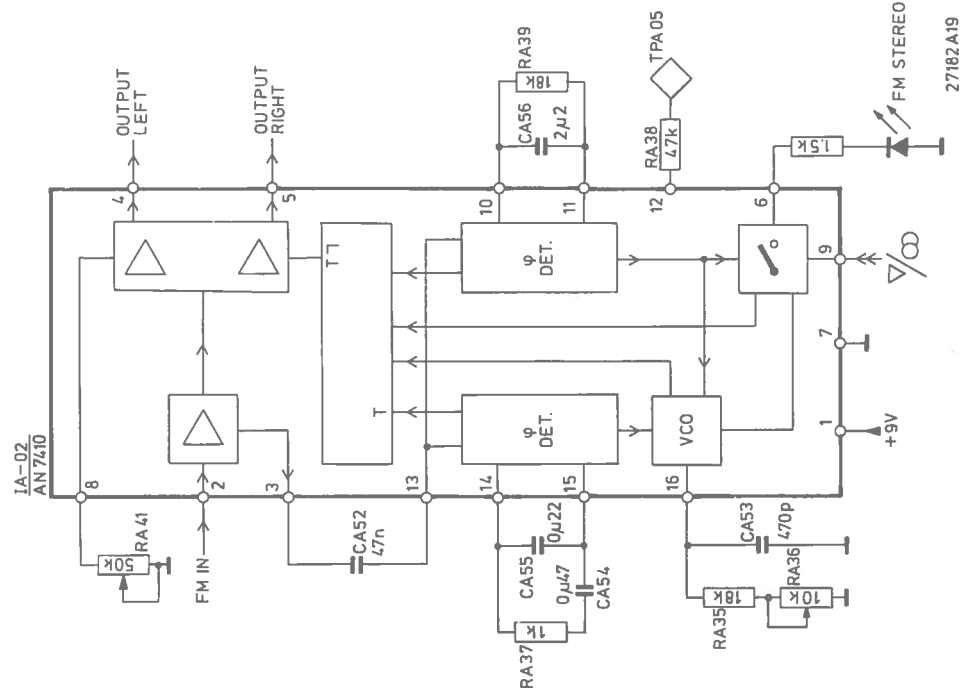
IN	OUT
1	2
0	0
0	1
1	0
1	1
1	0

IN	OUT
1	2
0	0
0	1
1	0
1	1
1	0

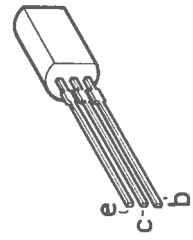
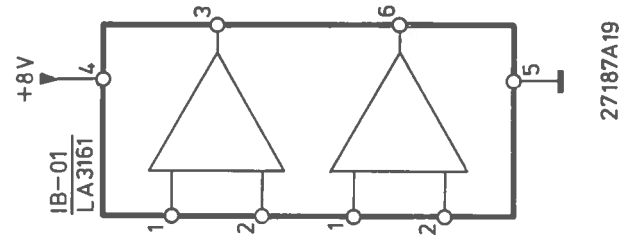
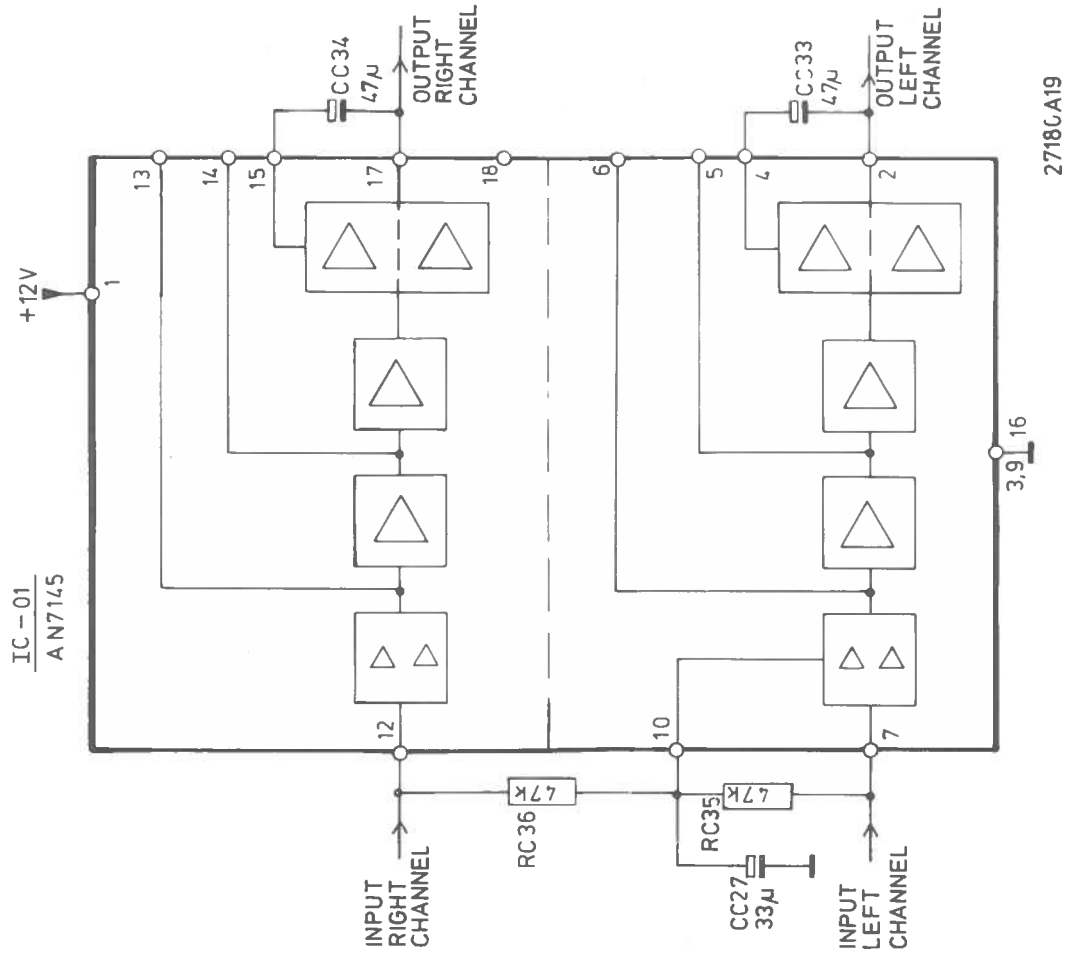
27181A19



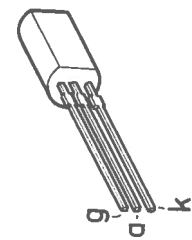
27173B19



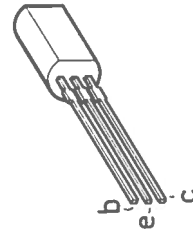
27182A19



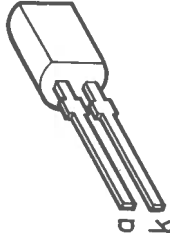
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2SA1015Y
2SA1015G
2SC1627
2SC1815G
2SC1815Y
2SC2274
2SC2229
2SC930



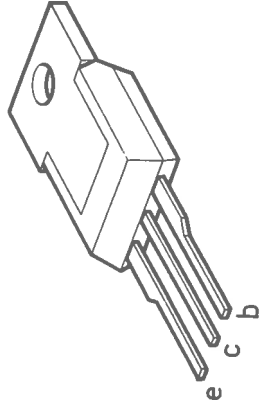
03P4MG



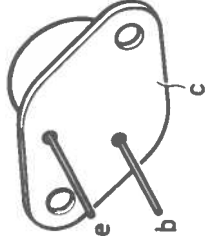
2SC2216



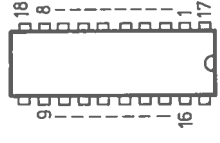
IX0037



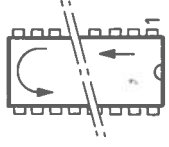
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2SD880
2SD613



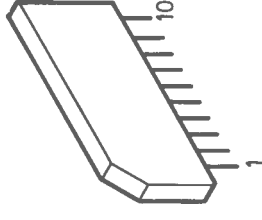
2SD897
2SC2199



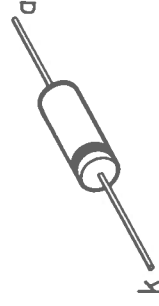
IX0065CE



IX0018TA
IX0028PA
IX0064CE
IX0118CE
IX0129CE
IX0133CE
IX0134CE
IX0135CE
TC4001BP
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HA11251
AN7410
LB1405
HA17902
HD14011BP
HD14066BP



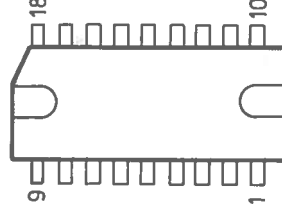
LA3161



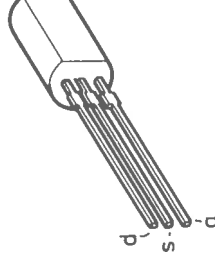
DX0117
DX0086
DX0101
DX0115
DX0125



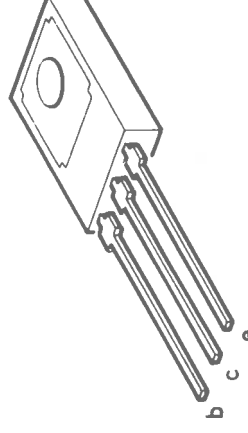
DS442
EX0024
EX0048
EX0051
EX0069
DS135E
IS553
GZA12U



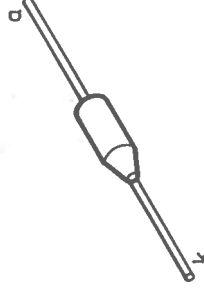
AN7145



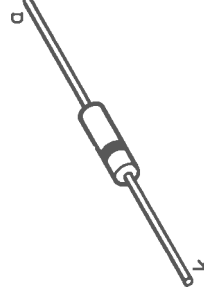
2SK41F



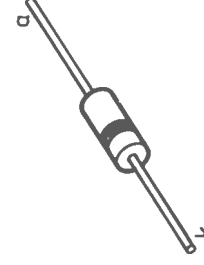
2SB632



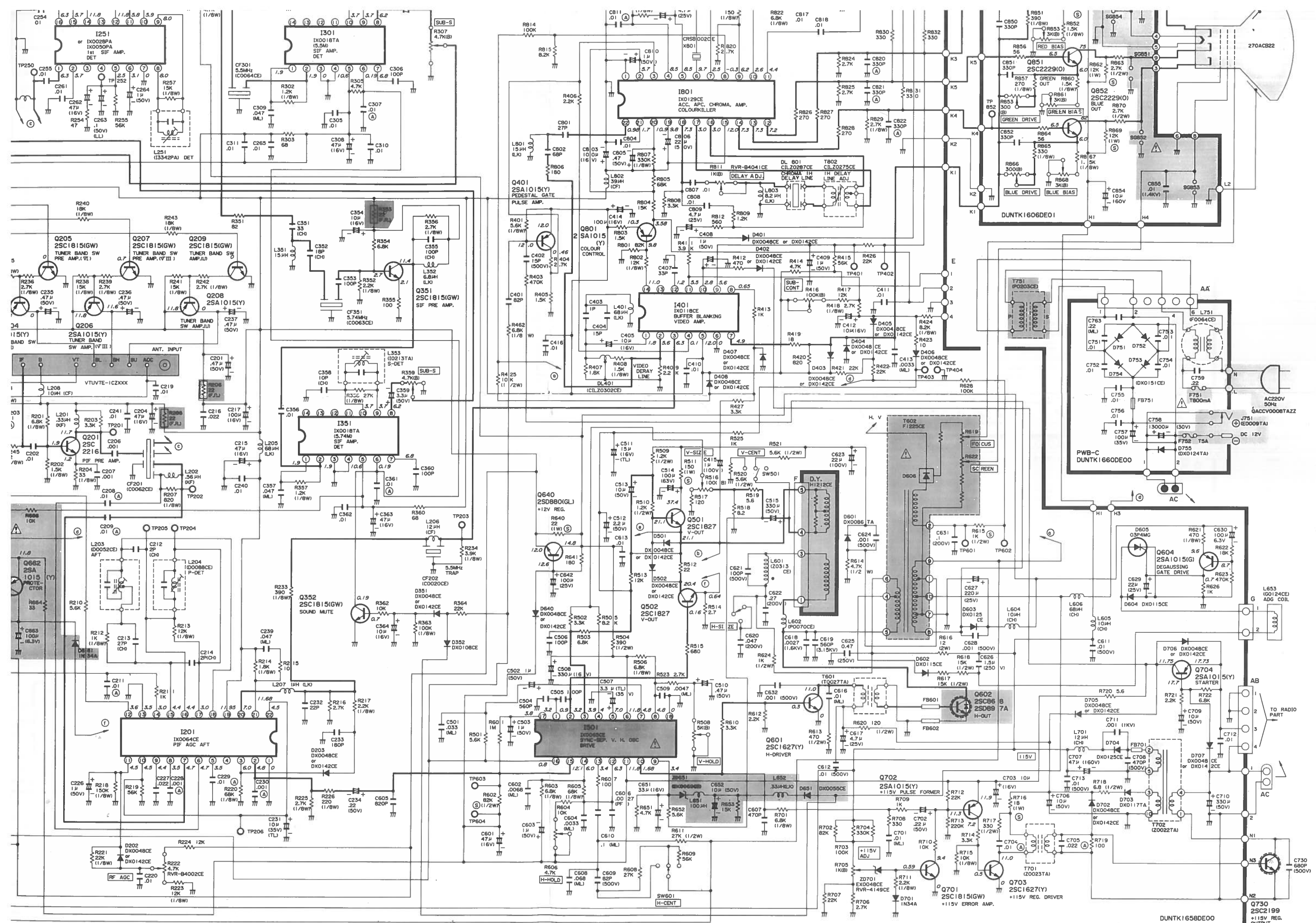
DX0124

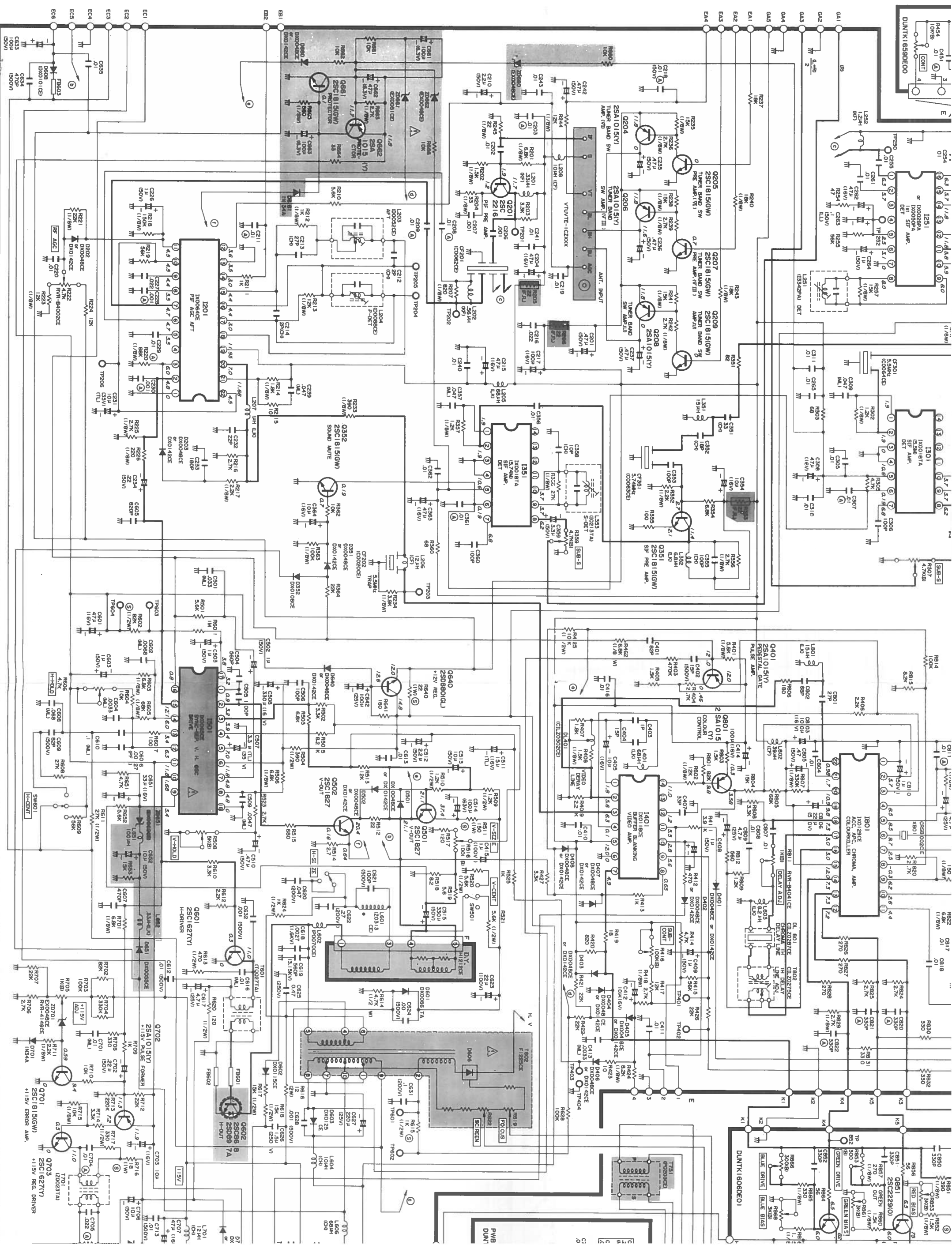


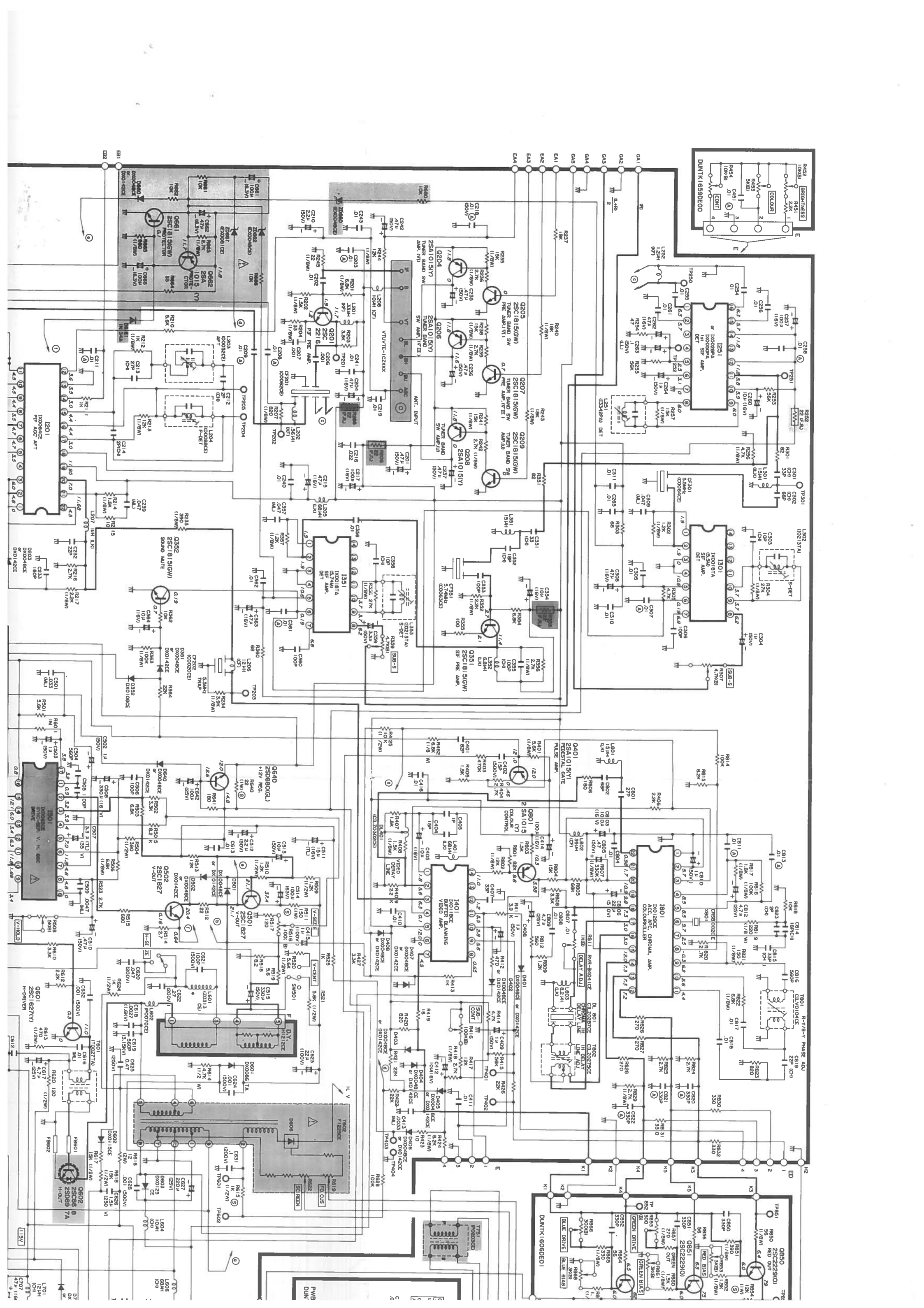
IS188AM
IN60
IN34A



DX0151

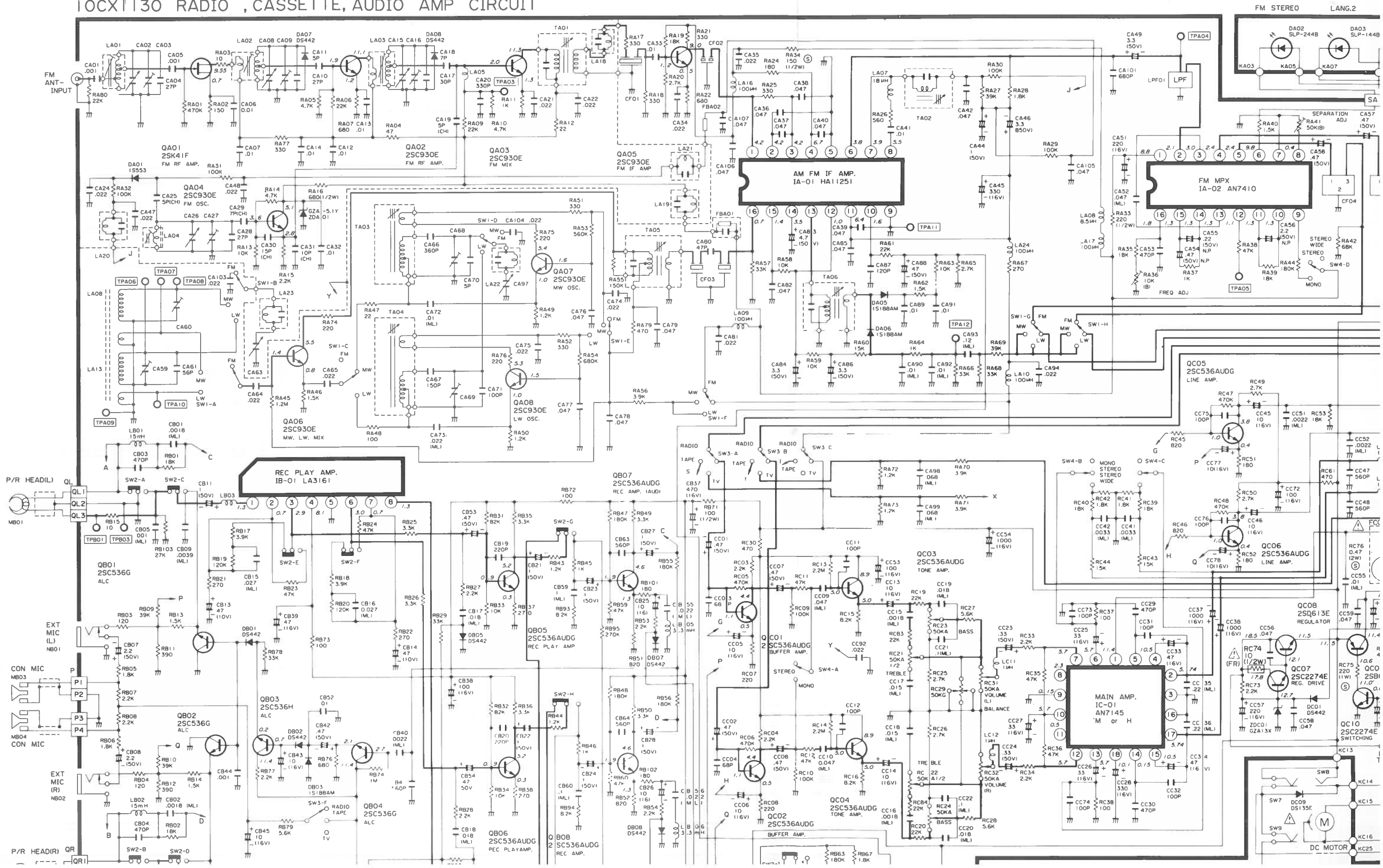




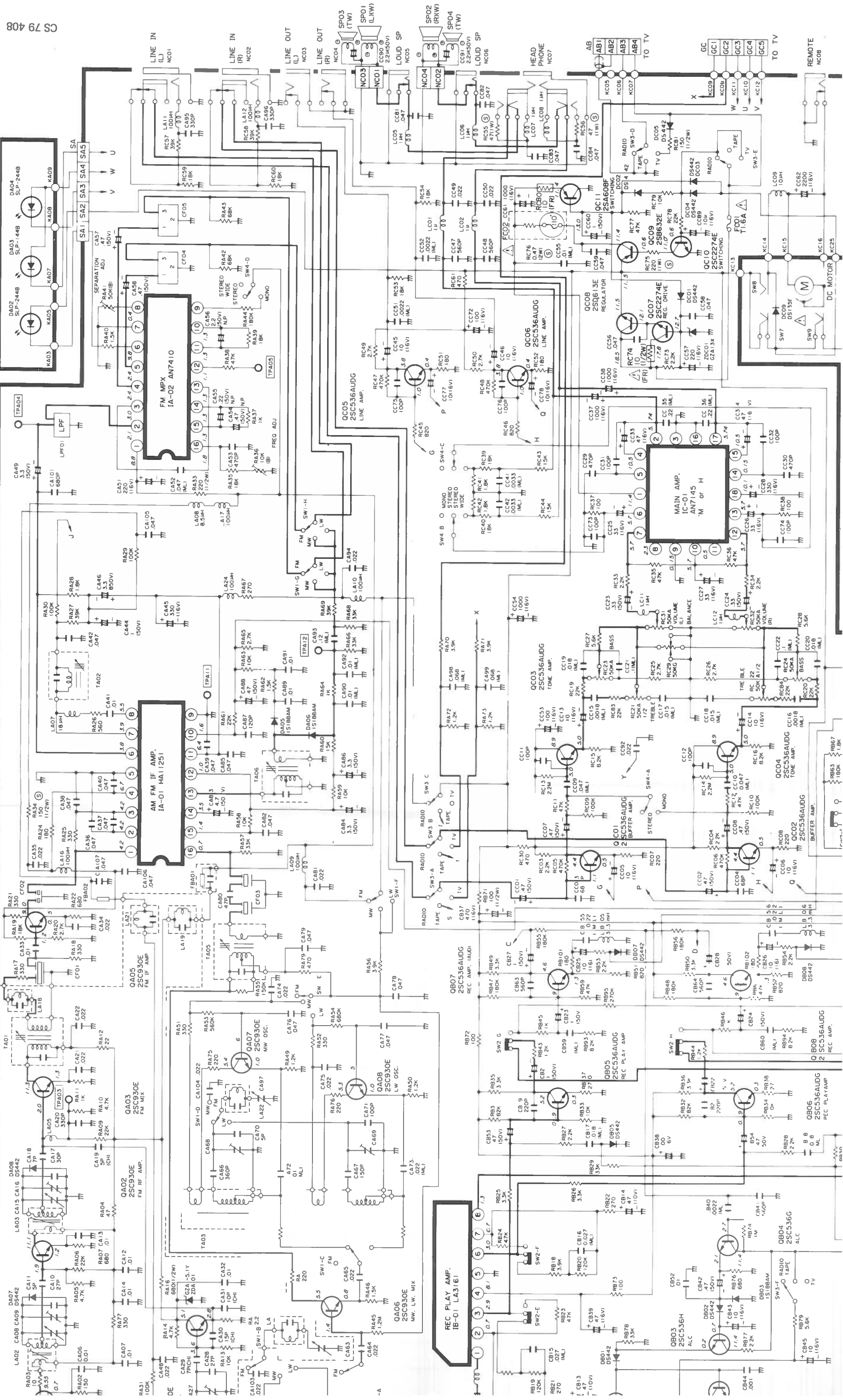




10CX1130 RADIO , CASSETTE, AUDIO AMP CIRCUIT



IO, CASSETTE, AUDIO AMP CIRCUIT



CS 79 408

