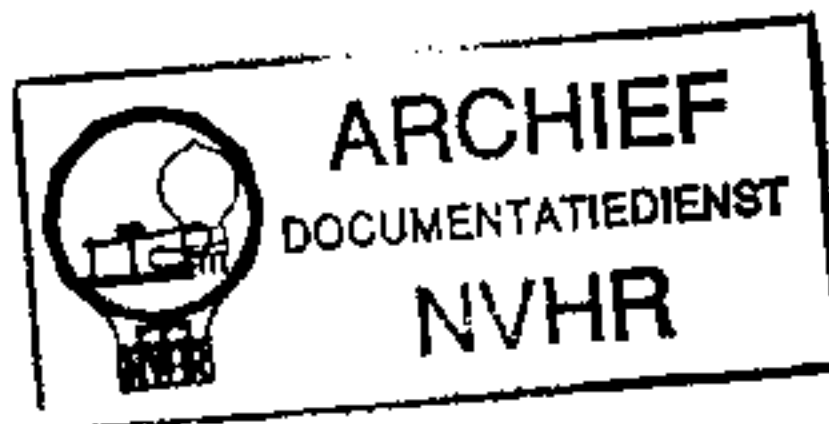


Service  
Service  
Service

Met dank aan [www.radiomuseum-hengelo.nl](http://www.radiomuseum-hengelo.nl)

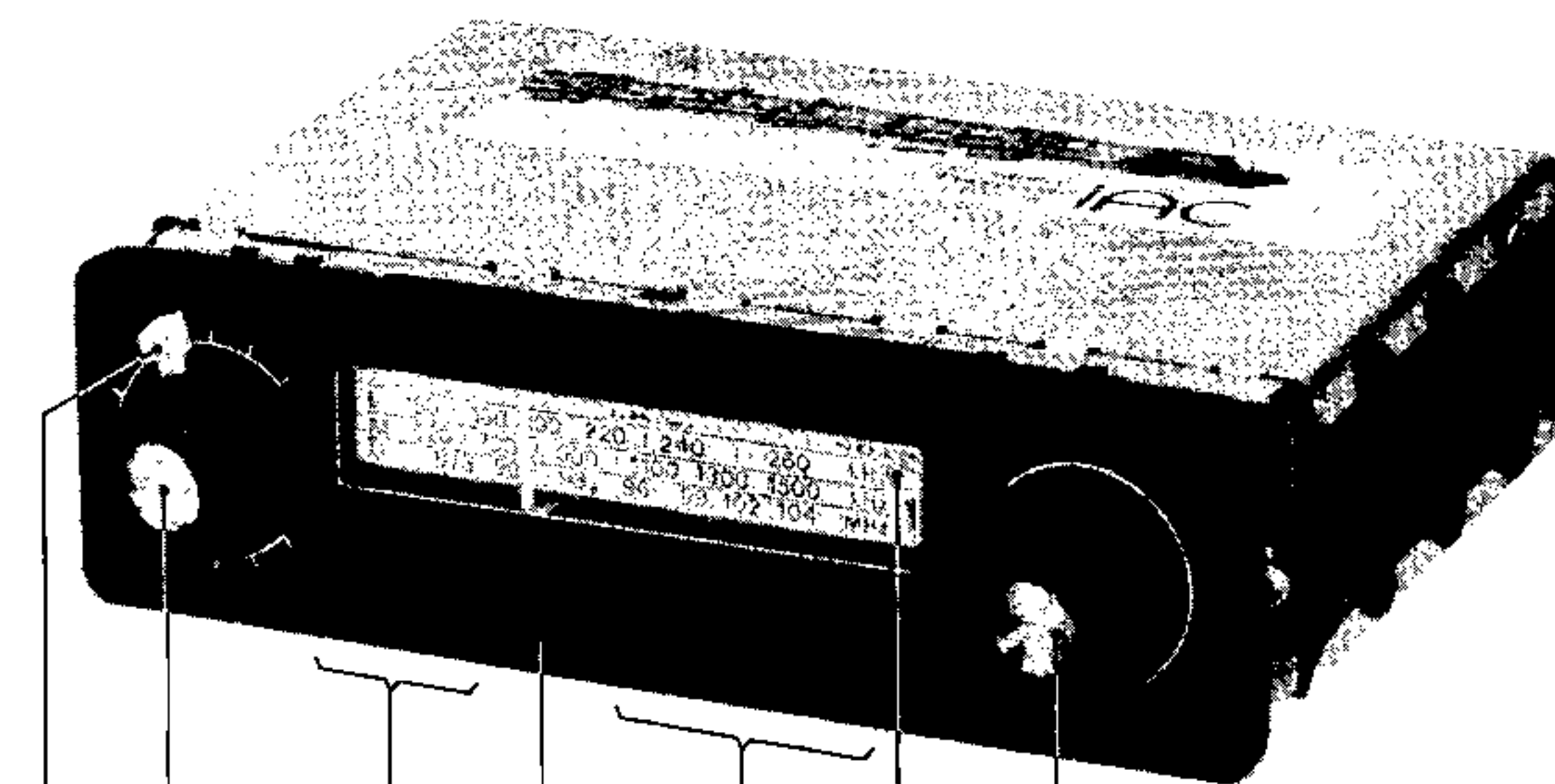
Ned. Ver. v. Historie v/d Radio



For circuit description IAC see Service Manual 22AN461/00

# Service Manual

12 V

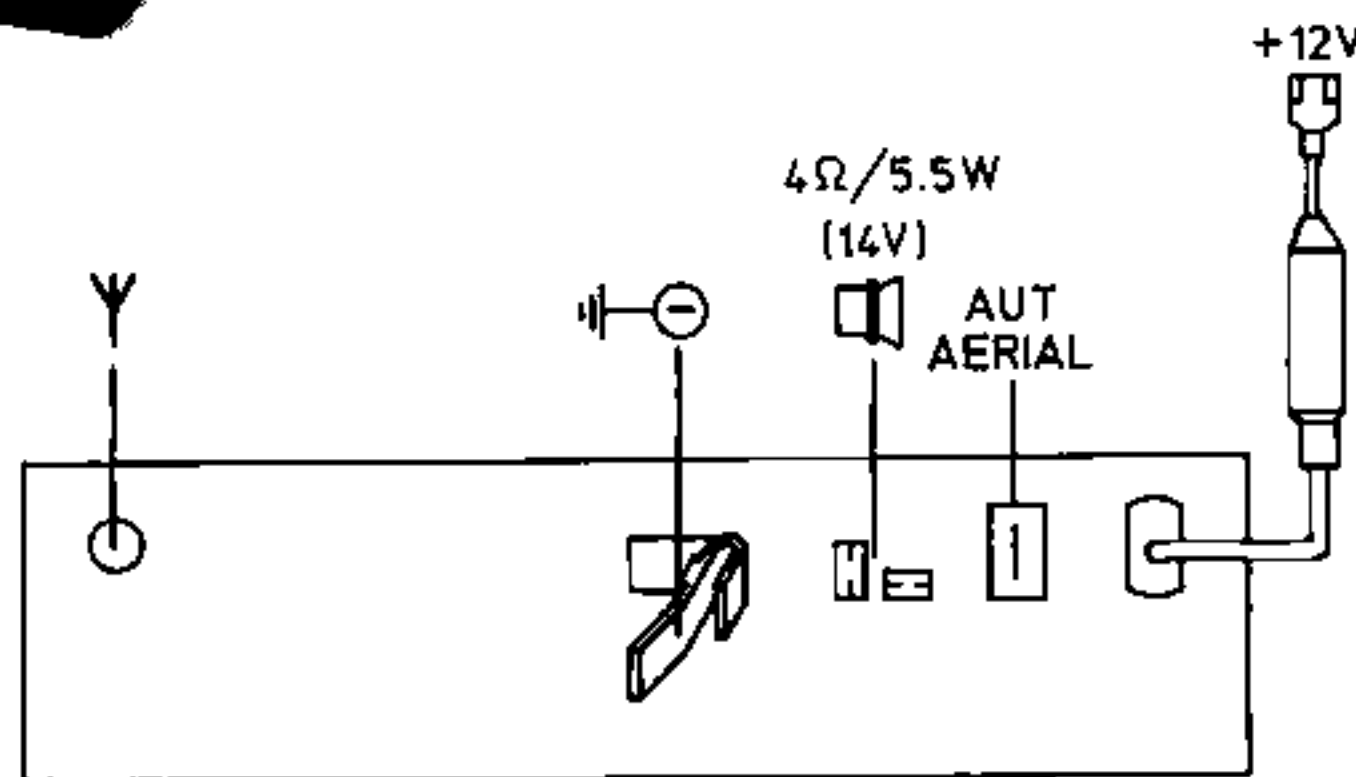


R576  
 R577 SK-A

2xMW SK-B  
1xLW SK-B  
3xFM SK-B  
/84/88 1xMW-3xLW-2x FM

AERIAL TRIMMER C580  
 S452/453 456/457

MW: 520-1605 kHz (577-187m)  
LW: 150-254 kHz (2000-1181m)  
FM: 87.5-104 MHz  
AM-IF 468 kHz  
AM-IF 460 kHz :/82  
FM-IF ca. 10.7 MHF  
DIMENSIONS 180 x 110 x 43mm

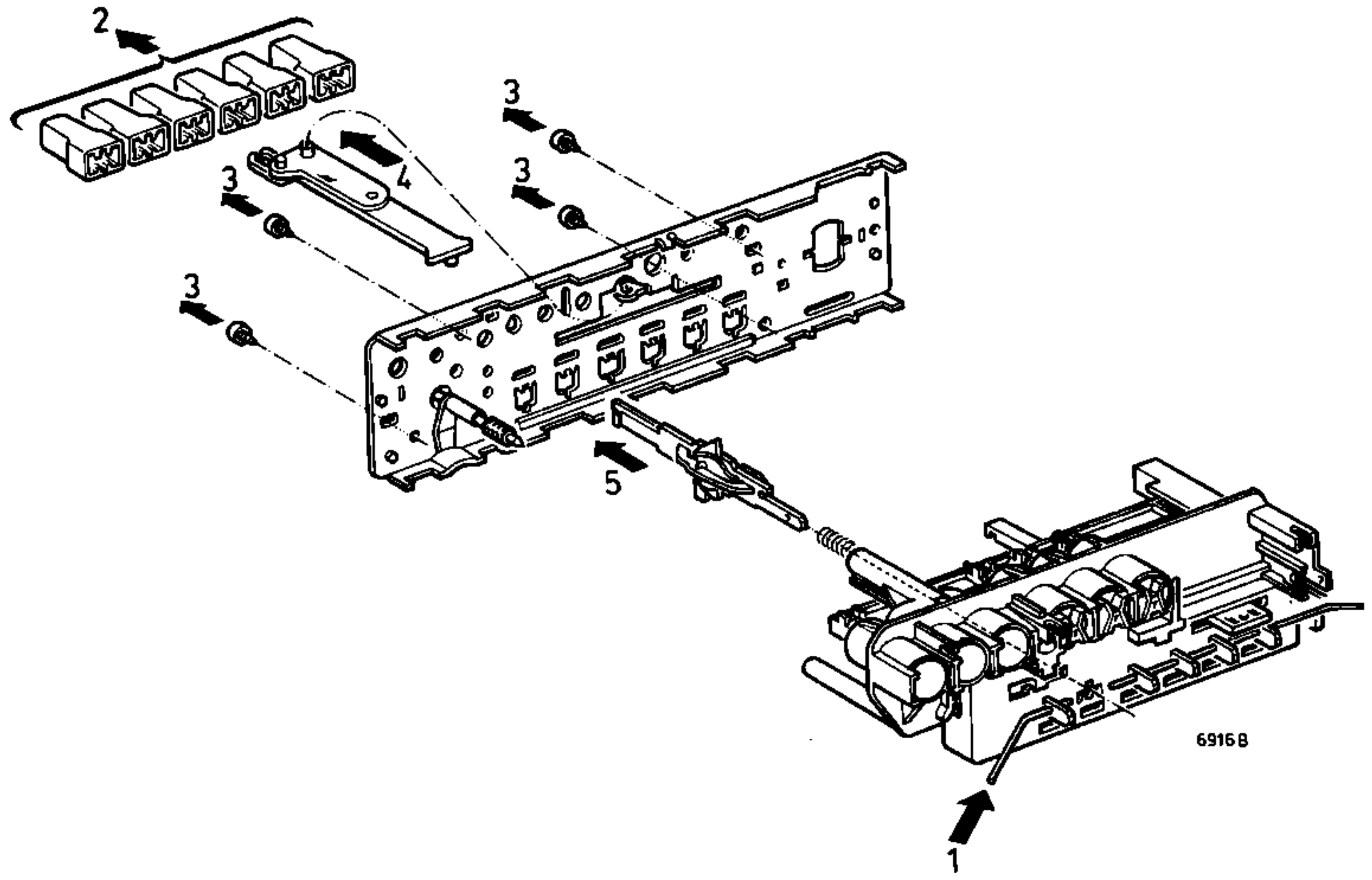


1009482

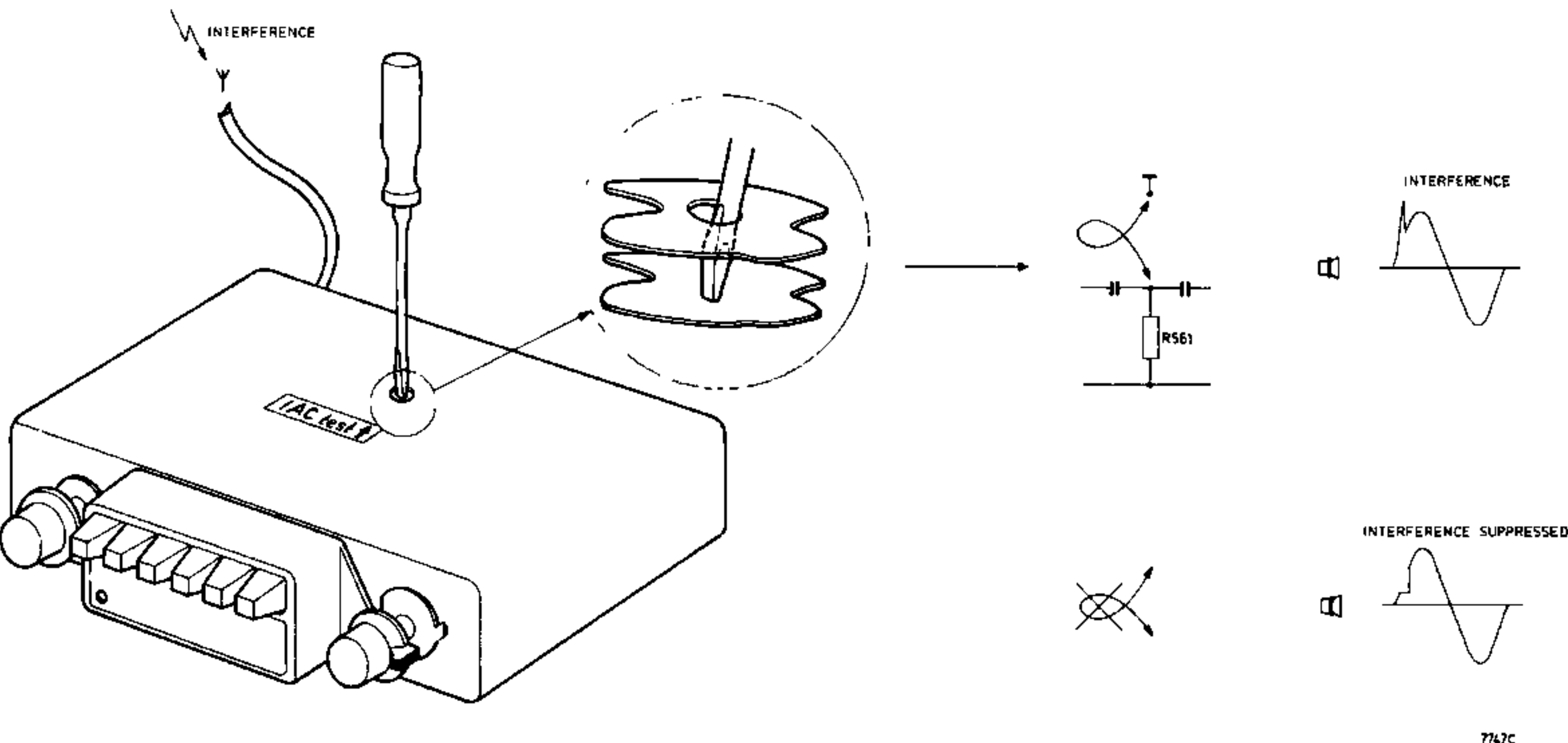


# REPAIR HINTS

## PRESTOLOCK UNIT

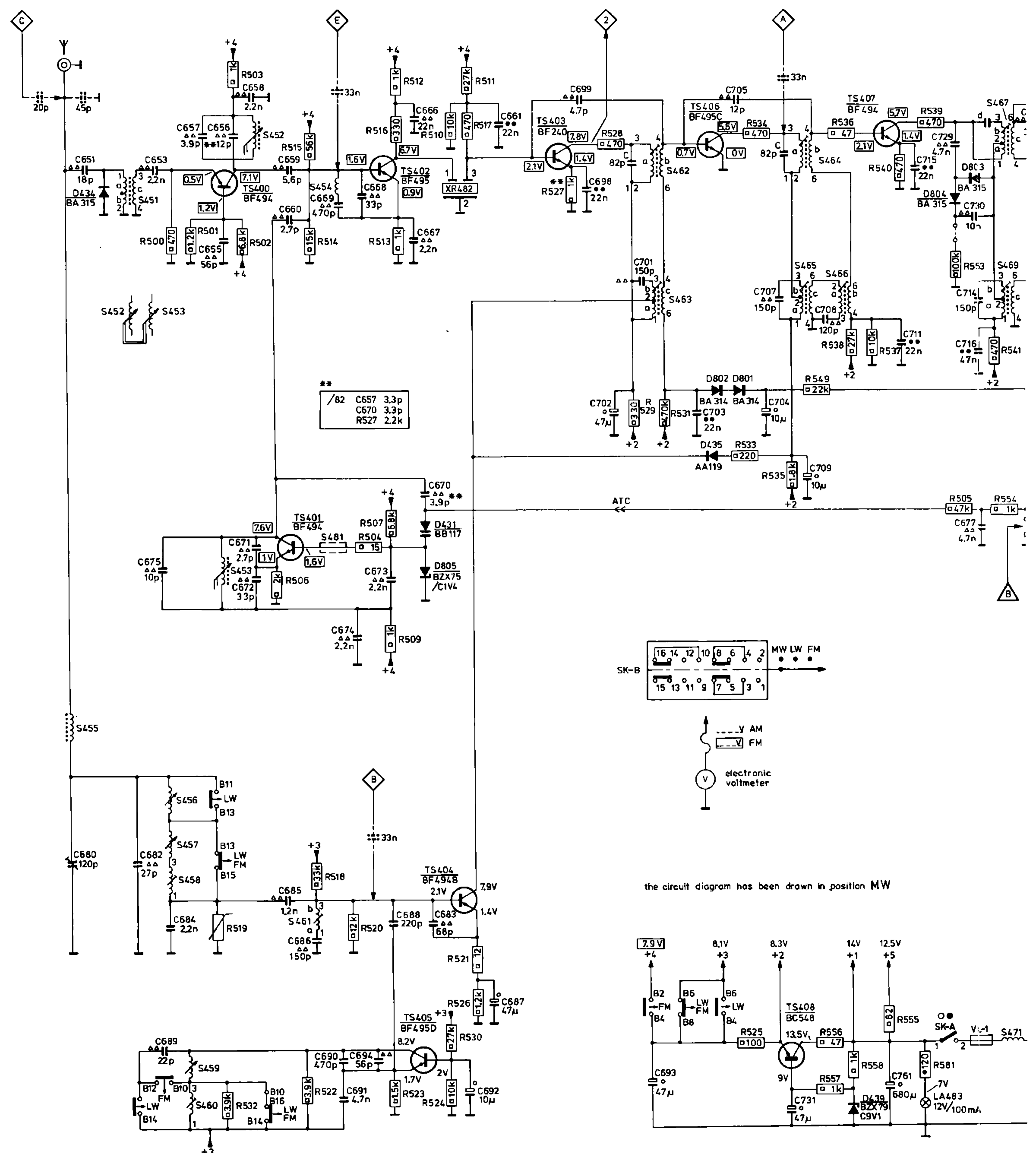


## IAC-TEST

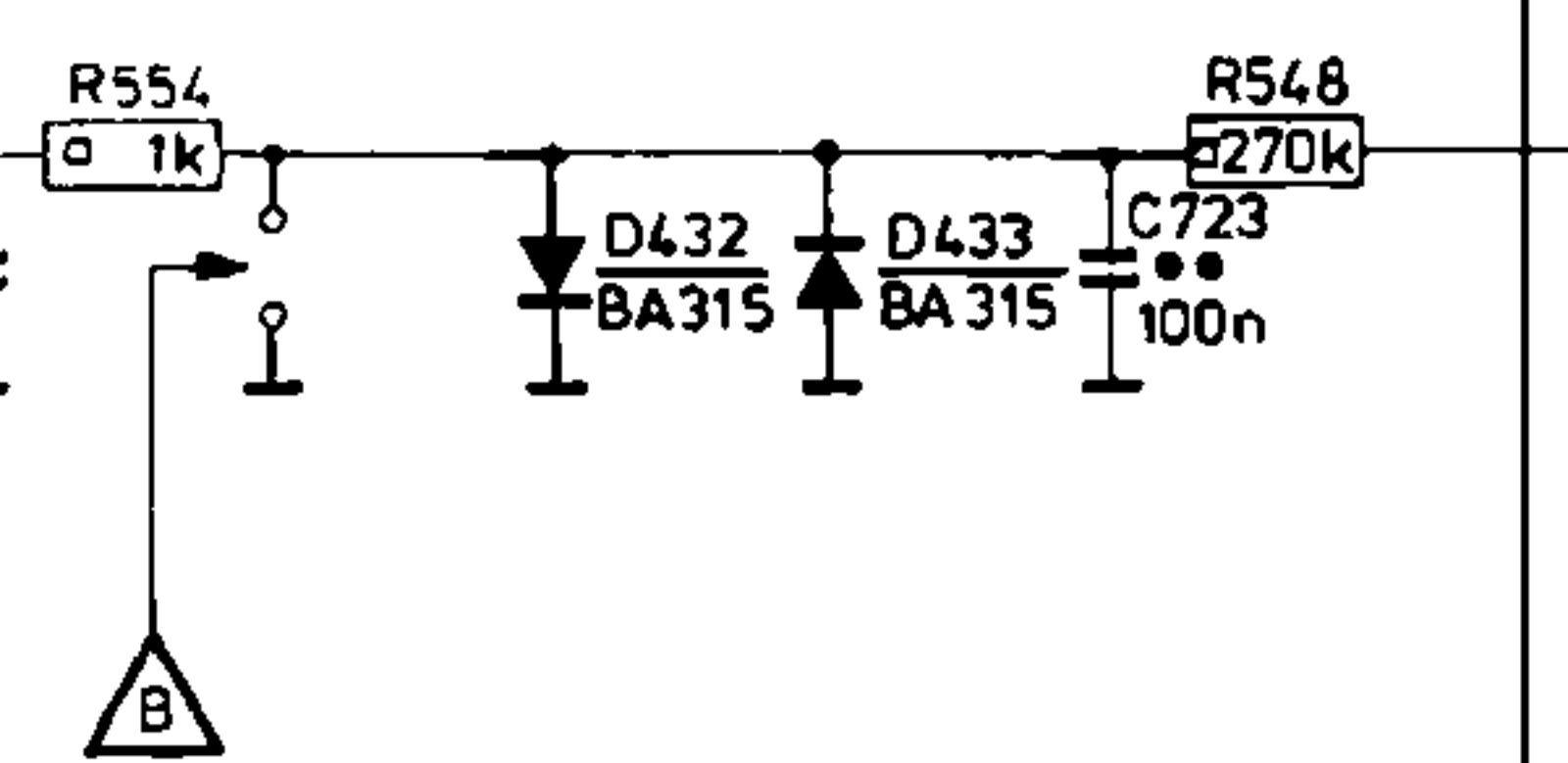
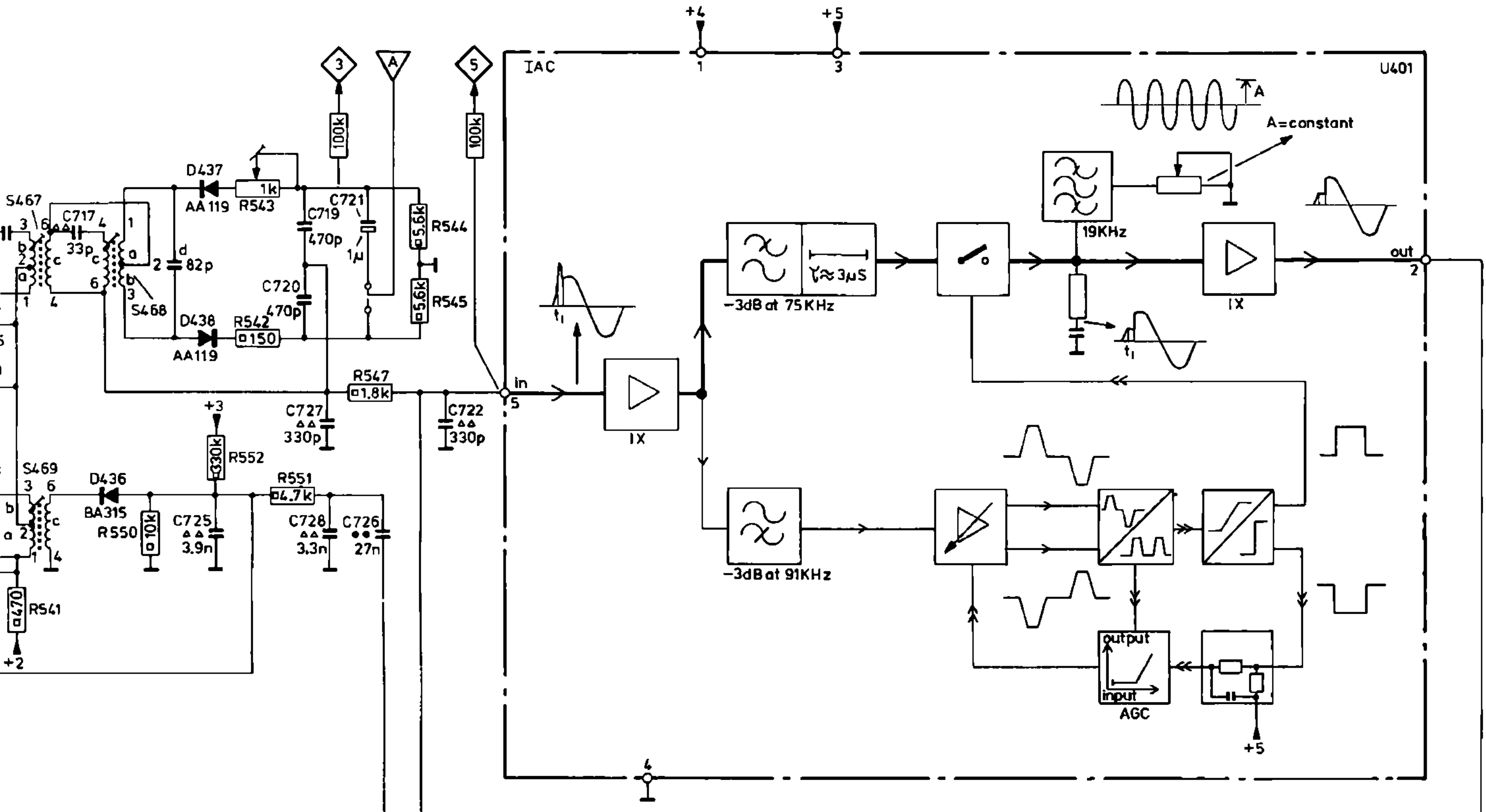


7747C

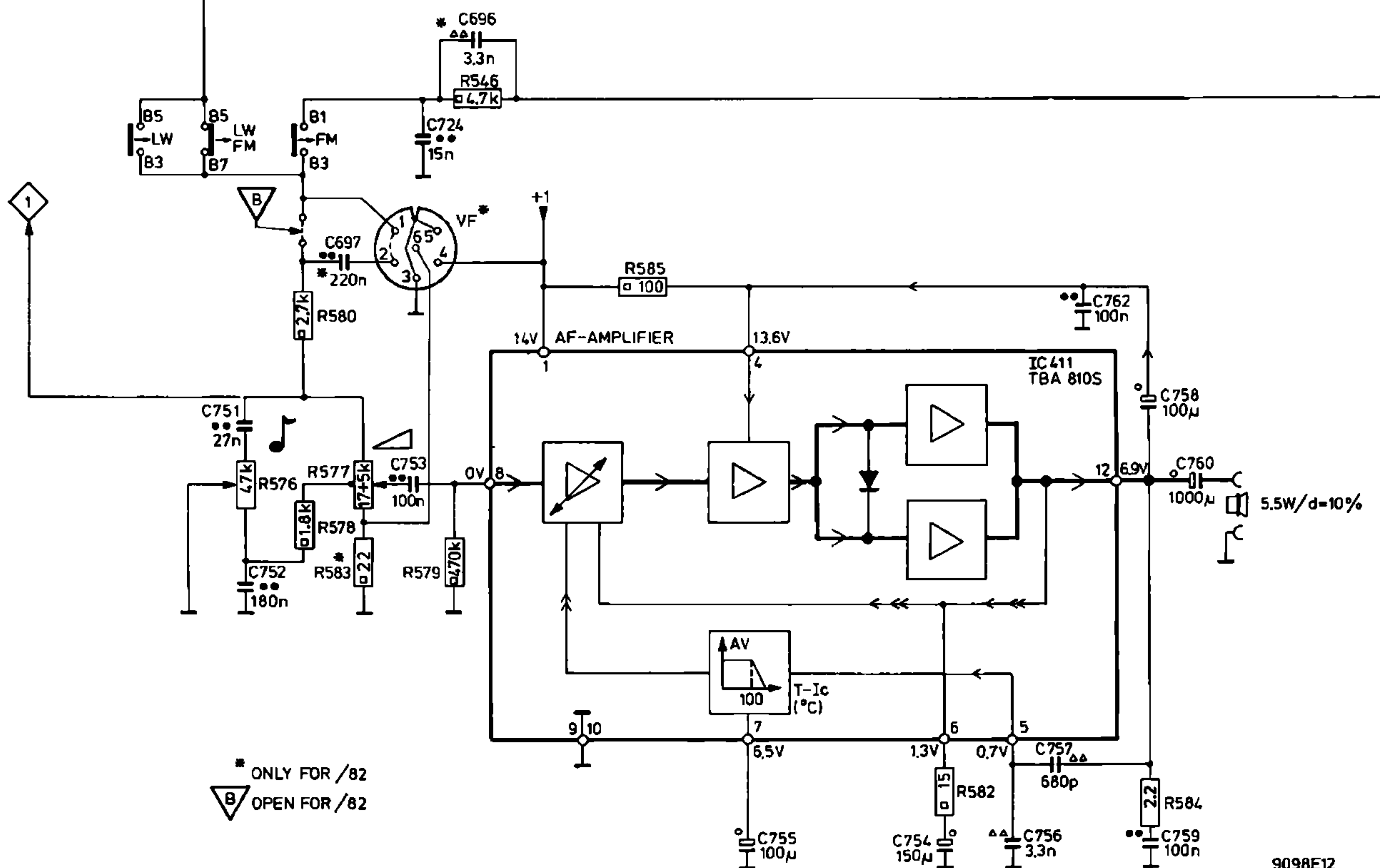
MISC	D434	TS400				TS401	TS402	D431 TS405,TS404,XR482	TS403	TS406,D435,D802,801				TS408	D439 TS407 LA483 D803,804 VL-1 D43	
S	455	451 456...460	453 452	461,454	481				462 463	464...466		471 467...46				
C650-C679	651	653,675	655...660,671,672			669	674,668,673,670,666,667		661					677		
C680-.....	680	682,689,684			685 686	690,691,694,688		683	692 687	698 699	702 701	693 703	705 707	704 709 731 708	711 715,761,729	730,716,714 7
R500-R520		500...502	519	503 506 504		518 520 512...516 504 507 509 508		510 517 511								505
R521-.....		532			522	523	526 530 521 524		527 528	529 531	525,533...535	556,557,538,536,558,540,537,550,539,581	553,541	55		



VL-1 D436	D432,433	D437,438																		MISC
71	467-469																			S
716,714	717	725	726-728	719-723	751-753	697	724	696	755	754	756	757	762	758	759	760				C650-C679
																				C680-.....
																				R500-R520
																				R521-.....

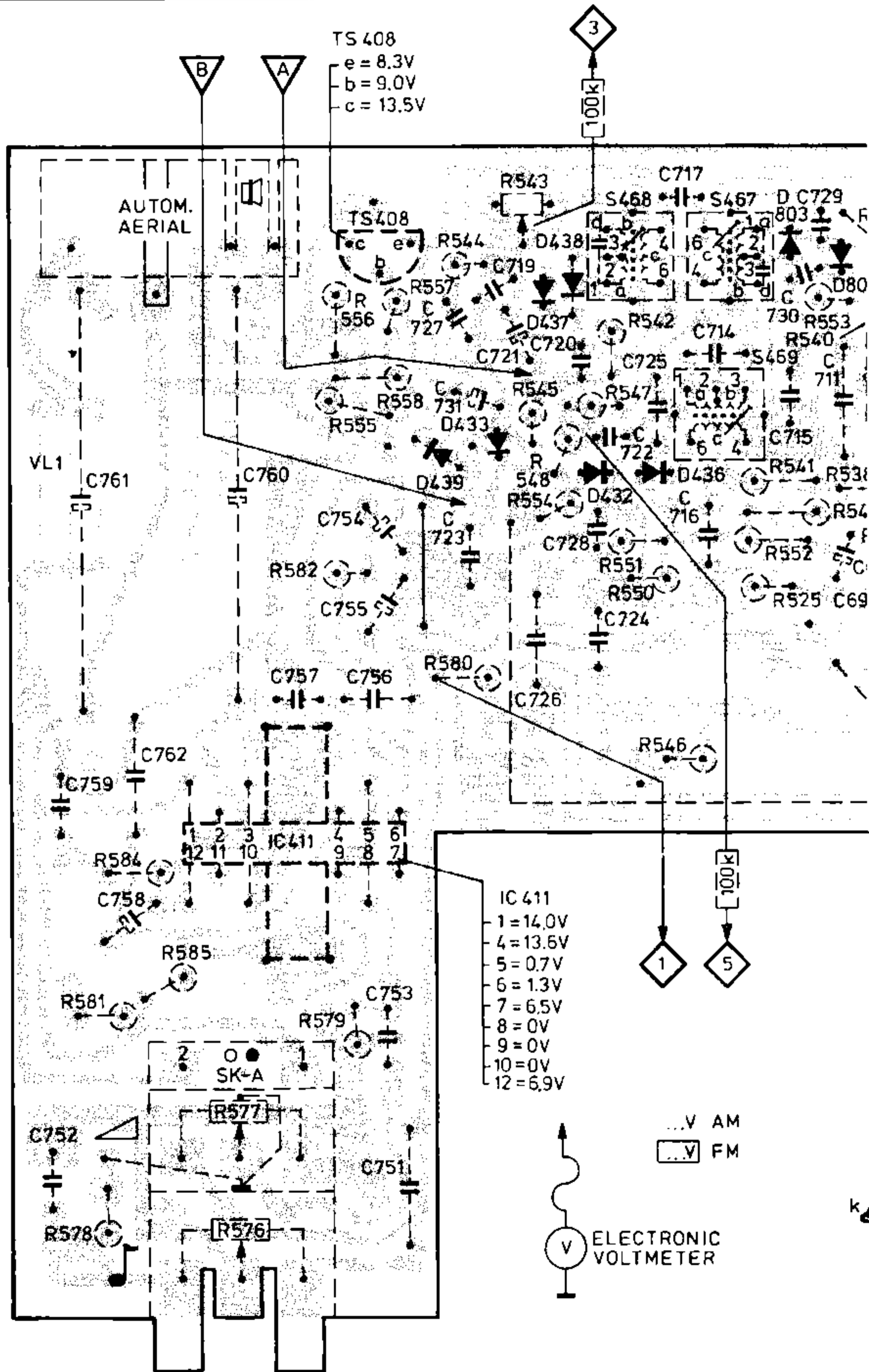


- CARBON RESISTOR E24 SERIES 0.125W 5%
- CARBON RESISTOR E12 SERIES 0.25W < 1MΩ 5%, > 1MΩ 10%
- PLATE CERAMIC CAPACITOR 500V
- FLAT-FOIL POLYESTER CAPACITOR
- MINIATURE ELECTROLYTIC CAPACITOR



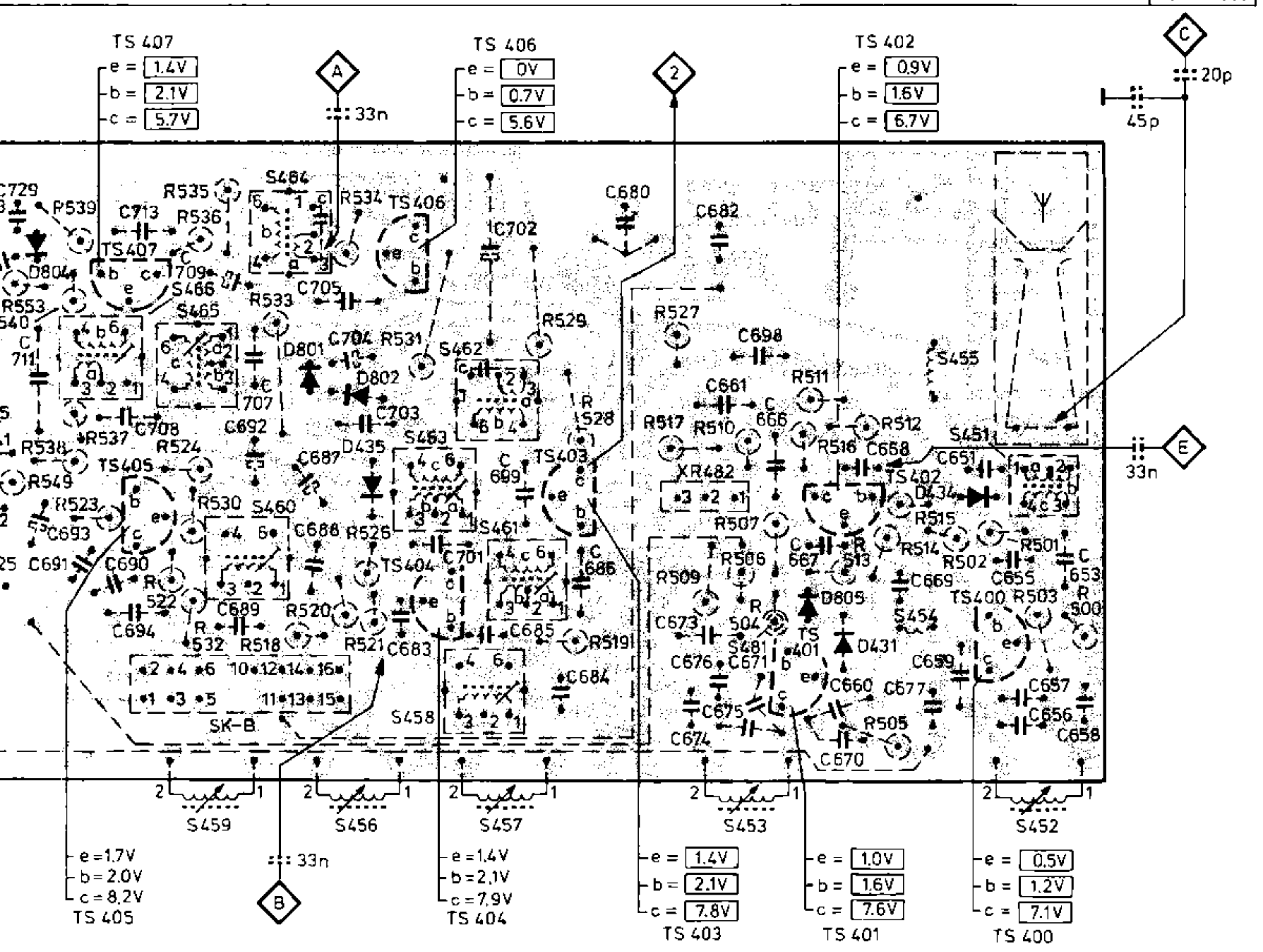
\* ONLY FOR /82  
 OPEN FOR /82

MISC.	VL1	SK-A	IC411	TS408	D439	D433	437	438	432	436	D803	804	TS									
S											468	467	469									
C650---700													693									
C701---762	759	761	752	762	758	760	753	757	751	727	719	724	731	726	728	725	714	717	729	711	730	
R500---530																						525
R531---559							555	558	544	543	548	545	554	547	542	551	550	546	552	553	537	
R576---585	578	581	584	585	576	577	582	579	580													





TS405.407	SK-B.D801.435.802	TS404.406	TS403	XR482	TS401.D805.431	TS402	D434	TS400	MISC.
466	465.459.460.464	456.458.463.462	461.457		453.481	454.455	452	451	S
693.691.690.694	689	692	688.687	683	685.699.684.686.680.673	676.682.661.698.660.666	670.677.659.651.655	658.653	C650...700
711.730.713.708	709	707.705	701--704						C701--762
523	522.524	518.520	521.526		529.528.519.517.527.509.510.507.506.504	511--516.505	500--503		R500...530
53.537--541	549	530.532	533--536	531					R531--559
									R576--585



10150D12

SK...							
MW (520-1605 kHz)	/80/84/85/88 468 kHz /82: 460 kHz	 	Min. Ind.		S469 S466 S465 S463 S461	 max.~  min.~	
MW (520-1605 kHz)	516 kHz 550 kHz 1500 kHz		Max. Ind.		C680 S459 S456 C681	 max.~	
LW (150-254 kHz)	145 kHz 160 kHz 220 kHz		Max. Ind.		S460 S457 S458		
FM (87.5-104 MHz)	 IF ( $\Delta f = 200 \text{ kHz}/50 \text{ Hz}$ ) IF (AM 1 kHz)			Min. Ind.	S462 S467 S464 S462 S468 R453		
FM (87.5-104 MHz)	94 MHz $\Delta f = 75 \text{ kHz}/1 \text{ kHz}$		94 MHz ▲	Close	S453 S452	 max.~	
<b>Interference absorption circuit</b>							
FM (87.5-104 MHz)	Pilot 19 kHz (250 mV)  T = 200 $\mu\text{s}$	 			R814		IAC
S452/453/456/457/459: → use item 55							

↑ Repeat ↓



(GB)

- Set C680 to mid-position
- Vary the generator-frequency between 10 and 11.5 MHz; determine the maximum and afterwards the -6 dB points by means of a sensitive HF-voltmeter. The IF is halfway the two -6 dB points. Adjust the FM-IF part to this frequency. *Note:* Connect the earth of the generator and the meter to point 2 of XR482.
- Open bridge . Set R543 to mid-position. Adjust for maximum height and symmetrie of the response curve.
- Close bridge . Adjust the S-curve to the zero passage.
- Trigger the oscilloscope with the square-wave voltage. Time base 20  $\mu\text{s}/\text{cm}$ . Adjust for minimum deviation of amplitude. See Figure.



(NL)

- Plaats C680 in de middenstand.
- Variëer de generatorfrequentie tussen 10 en 11.5 MHz; bepaal het maximum en daarna de -6 dB punten met behulp van een gevoelige HF-voltmeter. De MF ligt midden tussen de twee -6 dB punten in. Het FM-MF deel afregelen op deze frequentie (IF). *N.B.:* Massa voor generator en meter aan punt 2 van XR482.
- Open brug . Zet R543 in de middenstand. Regel af op maximale hoogte en symmetrie.
- Sluit brug . Regel de S-kurve af op nul-doorgang.
- Trigger de oscilloskoop met de blokspanning. Tijdbasis: 20  $\mu\text{s}/\text{cm}$ . Regel af op minimale afwijking van de amplitude Zie de figuur.



**F**

- 1 Placer C680 en position médiane.
- 2 Faire varier la fréquence du générateur entre 10 et 11,5 MHz; déterminer le maximum et ensuite les points -6 dB à l'aide d'un voltmètre HF. La FI se situe à mi-chemin des 2 points -6 dB. Régler la partie FM-FI à cette fréquence (IF).  
*Note: Relier la terre du générateur et l'appareil de mesure au point 2 de XR482.*
- 3 Ouvrir le pont . Placer R543 en position médiane. Régler sur hauteur et symétrie maximales de la courbe de réponse.
- 4 Fermer le pont . Régler au passage du zéro de la courbe en S.
- 5 Enclencher l'oscilloscope par la tension rectangulaire. Base de temps: 20  $\mu$ s/cm. Régler sur déviation minimale de l'amplitude. Voir figure.

**I**

- 1 Porre C680 in posizione centrale.
- 2 Far variare la frequenza del generatore fra 10 e 11.5 MHz; determinare il massimo e poi i punti -6 dB con l'aiuto di un voltmetro AF. La FI si trova a metà dei due punti -6 dB. Regolare la parte FM-FI a questa frequenza (IF).  
*Nota: Collegare la terra del generatore e l'apparecchio di misura sul punto 2 di XR482.*
- 3 Staccare il ponte . Porre R543 in posizione centrale. Regolare sul passaggio per lo zero della curva di risposta.
- 4 Chiudere il ponte . Regolare per pendenza massima e per simmetria della curva ad S.
- 5 Mettere l'oscilloscopio in marcia con una tensione rettangolare. Base di tempo 20  $\mu$ s/cm. Regolare su minima deviazione dell'amplitude. Vedi fig.



**DK**

- 1 Sæt C680 i midterstilling.
- 2 Varier generatorfrekvensen mellem 10 og 11,5 MHz, opsøg maximum og herefter -6 dB punkterne ved hjælp af et følsomt HF-voltmeter. Mellemfrekvensen ligger midt imellem de to -6 dB-punkter. Juster FM-MF-delen til denne frekvens (IF).  
*Bemærk: Stelforbind generatoren og instrumentet til punkt 2 på XR482.*
- 3 Abn broen . Sæt R543 i midterstilling. Juster til max. højde og symmetri.
- 4 Luk broen . Juster S-kurven til nulgenngang.
- 5 Trig oscilloskopet eksternt med firkantspændingen, time base 20  $\mu$ s/cm. Juster til størst mulig konstantamplitude.



**SF**

- 1 Käänä C680 keskiasentoon.
- 2 Muuta generaattoritaajuus 10:n ja 11,5 MHz:n välille äärää maksimi ja sen jälkeen -6 dB navat herkäällä HF-volttimittarilla älitajuus on kahden -6 dB navan välillä. Säädä välitajuusmodulaation osa tähän taajuuteen (IF).  
*Huom: Lütä generaattorin ja mittarin maa XR482:n pisteeseen 2.*



**D**



- 1 Drehe C680 in Mittelstellung.
- 2 Variiere die Generatorfrequenz zwischen 10 und 11.5 MHz; bestimme das Maximum und dann die -6 dB Punkte mit einem empfindlichen HF-Voltmeter. Die ZF befindet sich mitten zwischen den beiden -6 dB Punkten. Justiere den FM/ZF Teil auf diese Frequenz (IF).  
*Anmerkung: Erde des Generators und das Messgerätes an Punkt 2 von XR482 legen.*
- 3 Öffne Brücke . Drehe R543 in Mittelstellung. Justiere auf maximale Höhe und Symmetrie.
- 4 Schliesse Brücke . Die S-Kurve auf den Nulldurchgang abgleichen.
- 5 Triggere den Oszillographen mit der Rechteckspannung. Zeitbasis: 20  $\mu$ s/cm. Justiere auf minimale Abweichung der Amplitude. Siehe Abb.

**S**

- 1 Ställ C680 i mittläge
- 2 Variera generatorfrekvensen mellan 10 och 11,5 MHz och bestäm, med hjälp av en känslig HF-voltmeter, maximum och därefter -6 dB punkterna. MF-frekvensen ligger mitt mellan de -6 dB punkterna. Justera FM-MF enheten till denna frekvens (IF).  
*Märk: Anlut generatorns och meters jord till stift 2 ä XR482.*
- 3 Oppna brygga . Ställ R543 i mittläge. Justera till max. höjd och symmetri.
- 4 Slut brygga . Justera S-kurvan till nollgenomgång.
- 5 Trigga oscilloskopet extern met fyrkantspänningens tidbas 20  $\mu$ s/cm. Justera till en sa konstant amplitud som möjligt.

**N**

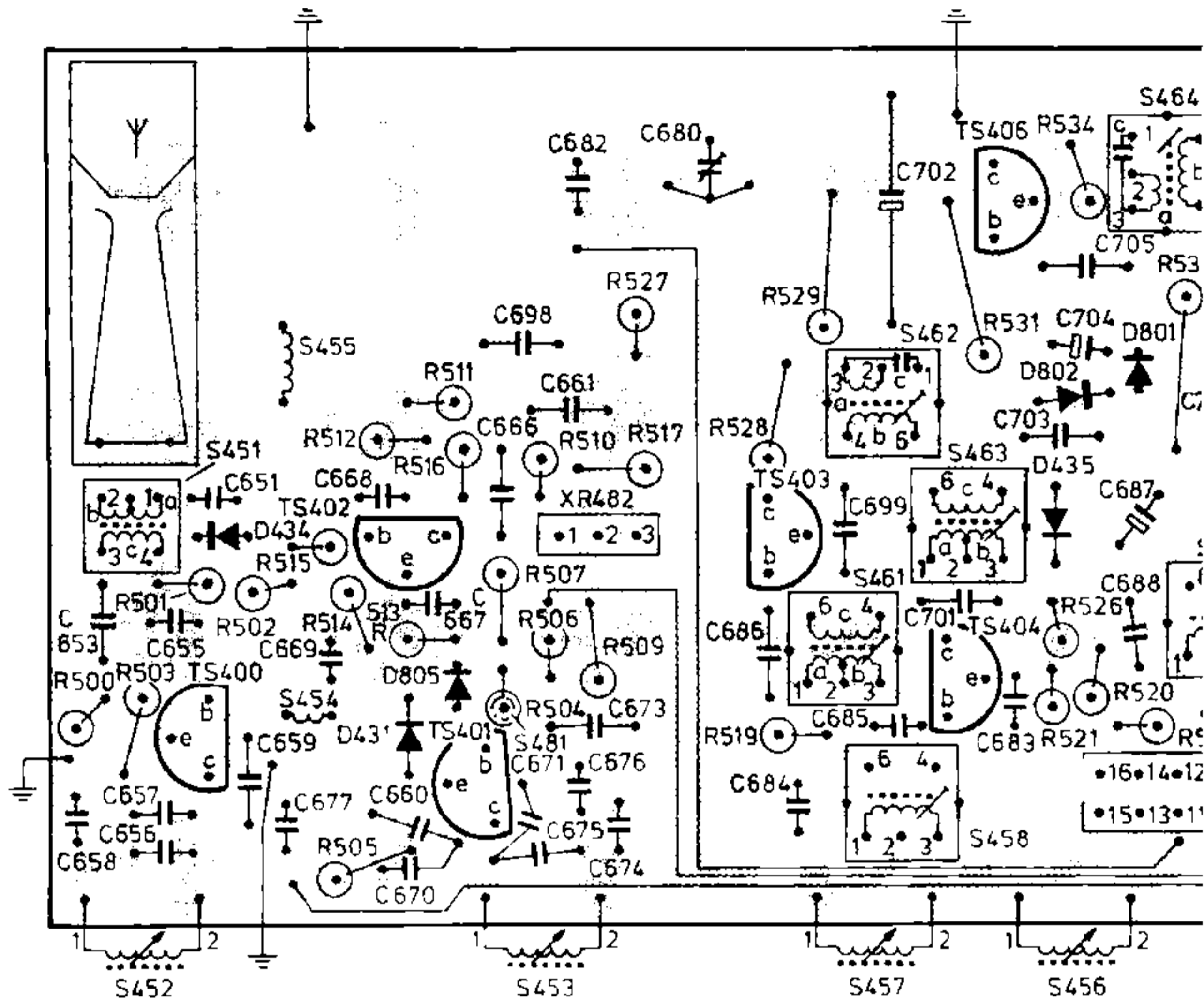
- 1 Set C680 i midstilling.
- 2 Varier generatorfrekvensen mellom 10 og 11.5 MHz. Finn maksimum, deretter -6 dB punktene ved hjelp av et følsomt HF-voltmeter. MF ligger på midten av de to -6 dB punktene. Juster FM-MF-delen til denne frekvens (IF).  
*Bemerk: Kople generatorens og meterens jord til punkt 2 XR482.*
- 3 Apne broen . Set R543 i midstilling. Juster S-kurvan til 0-gjennomgangen.
- 4 Forbind broen . Juster til maks. symmetri på S-kurven.
- 5 Utlös oscilloskopet ekstrement med Firkantspenningen, tidsbasis 20  $\mu$ s/cm. Juster til mest mulig konstant amplitude.

- 3 Avaa silta . Käänä R543 keksiasentoon. Säädä nollapiste S-käyrän keskelle.
- 4 Sulje silta . Säädä S-käyrän maksimi symmetria.
- 5 Liipaise oskilloskooppiulkopuolisella sakarajännitteellä. Aika-akseli 20  $\mu$ s/cm. Säädä amplitudi mahdollisimman vakioksi.



MISC.	TS400 D434		TS402 D431,805		TS401 XR482		TS403		TS404,406,D802,435,80	
S	451,452		455,454		481,453		457,461		462,463,458,456	
C650...700	653,655...658,651,659,677,660,666		671,698,661,682,673		676,680,686,684,699,685		683		687,688	
C701...731,752...762									701...704	
R500...530	500...503		505,511...516		504,506,507,510,509,527,517,519,528,529				526,521	
R531...559									531	
R576...585									533...53	

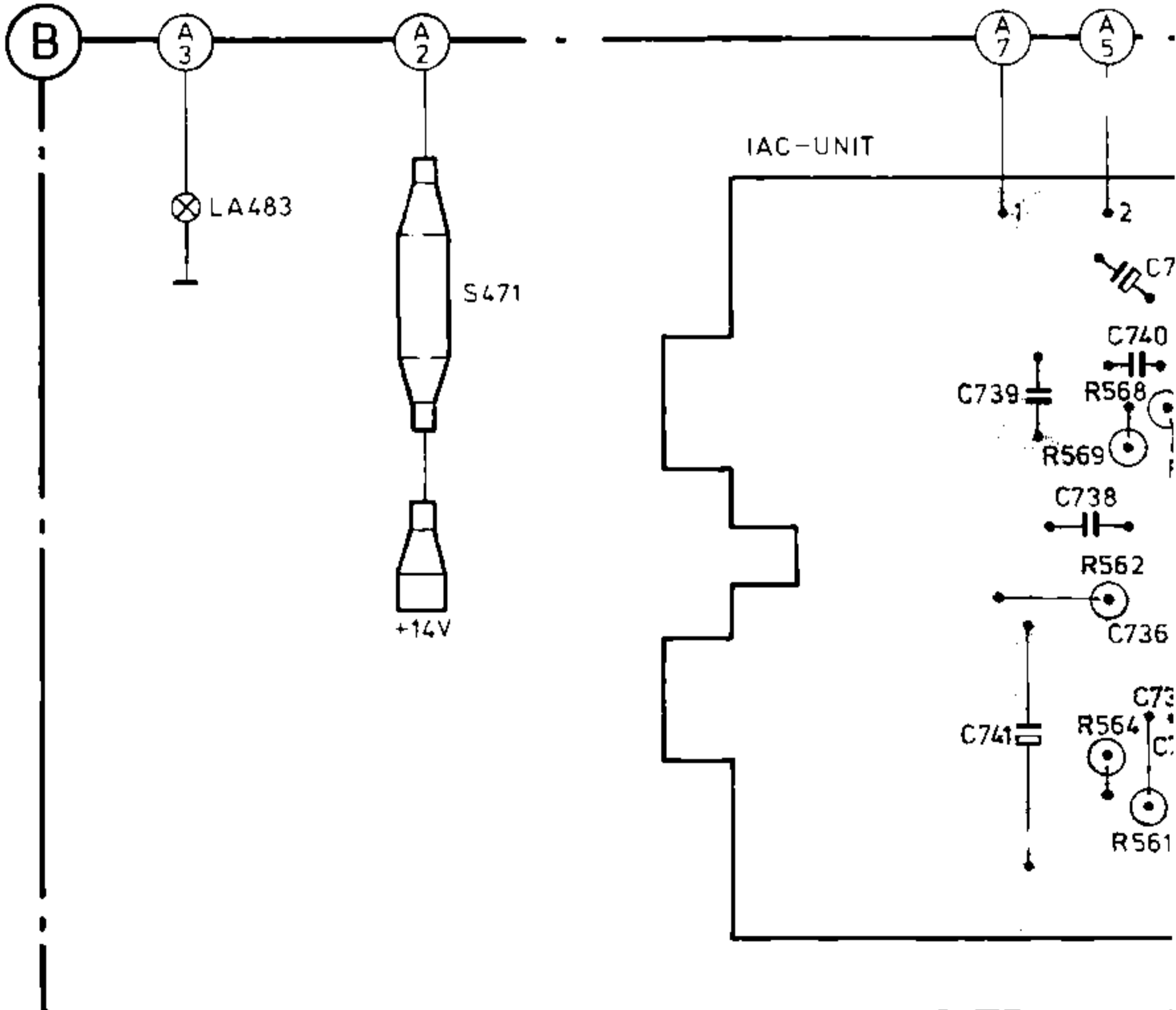
A



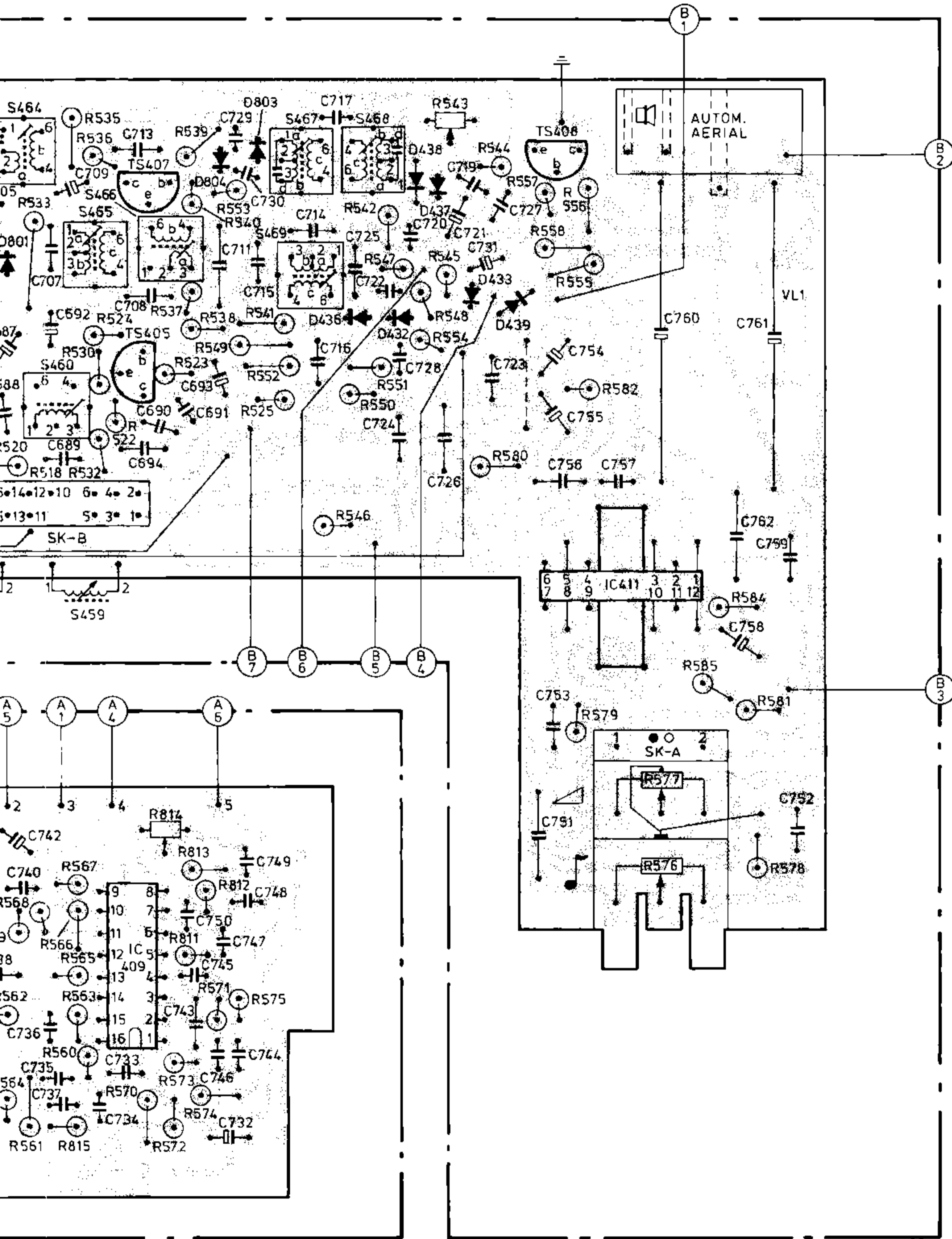
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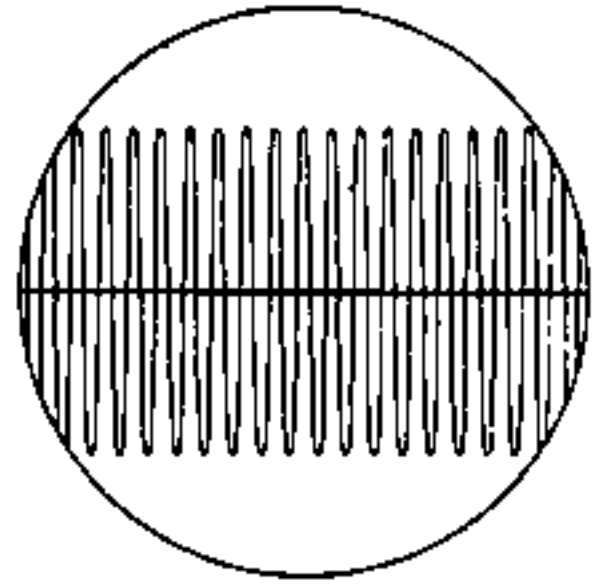
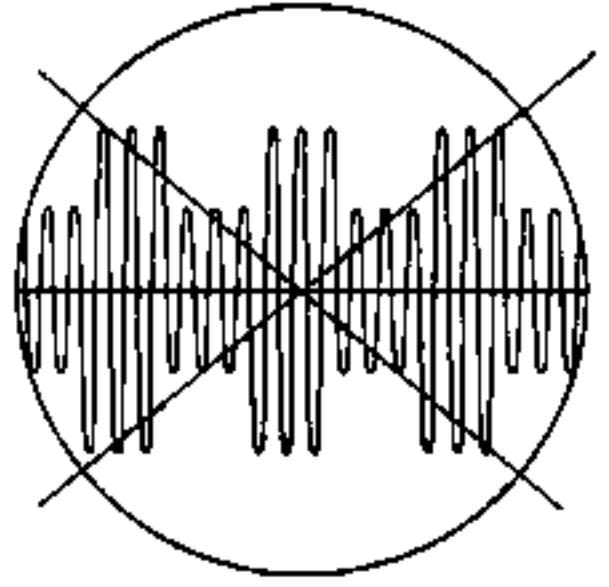
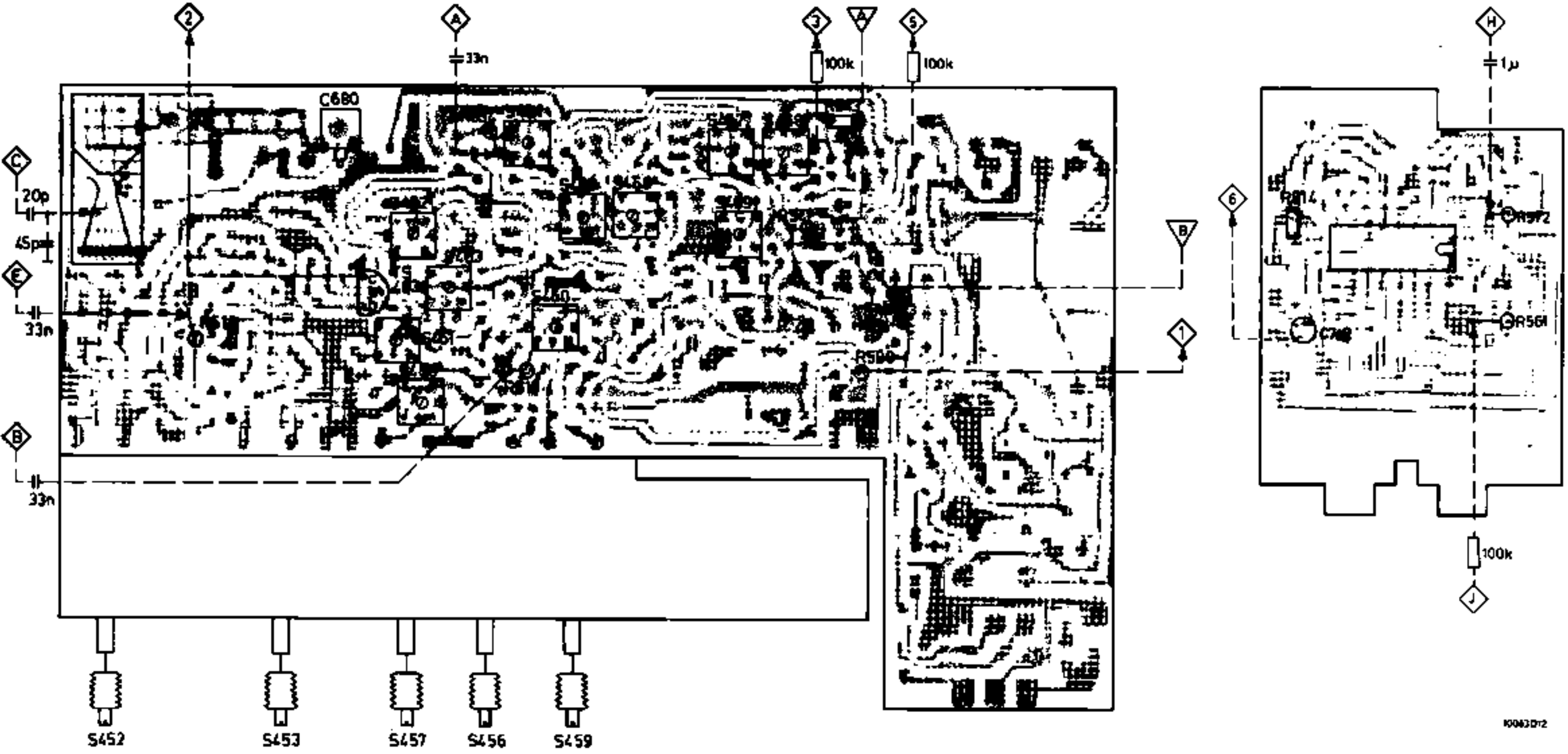
UNIT B

MISC.	C	R
LA 483	742	814
S47	749	
	740	813
	748	567
	739	812
IC 40	750	569
	747	568
	738	566
	745	811
	735	565
	743	575
	746	562
	741	563
	744	571
	733	560
	735	573
	737	564
	734	570
	736	574
	738	561
	739	815
	740	572



435.801.SK-B	TS407.405	D804.803	D436.432.438.437.433	D439	TS408	IC411.SK-A	VL1	MISC.	
464.460.459.465	466	469.467	468					S	
87.688	692.689	694.690.691.693						C650...700	
705.707.709	708.713	711.729.730.714	717.722.724	728.719	721.731.723.751.753	757	760	758.762.752.761.759	C701...762
520.518	524.522	523	525						R500...530
533...536	532.530	537...541.553.552	546.550.551.542.547.554.545.548.544.543.555	558	579.582	577.576.585.584.581	578		R531...559
									R576...585





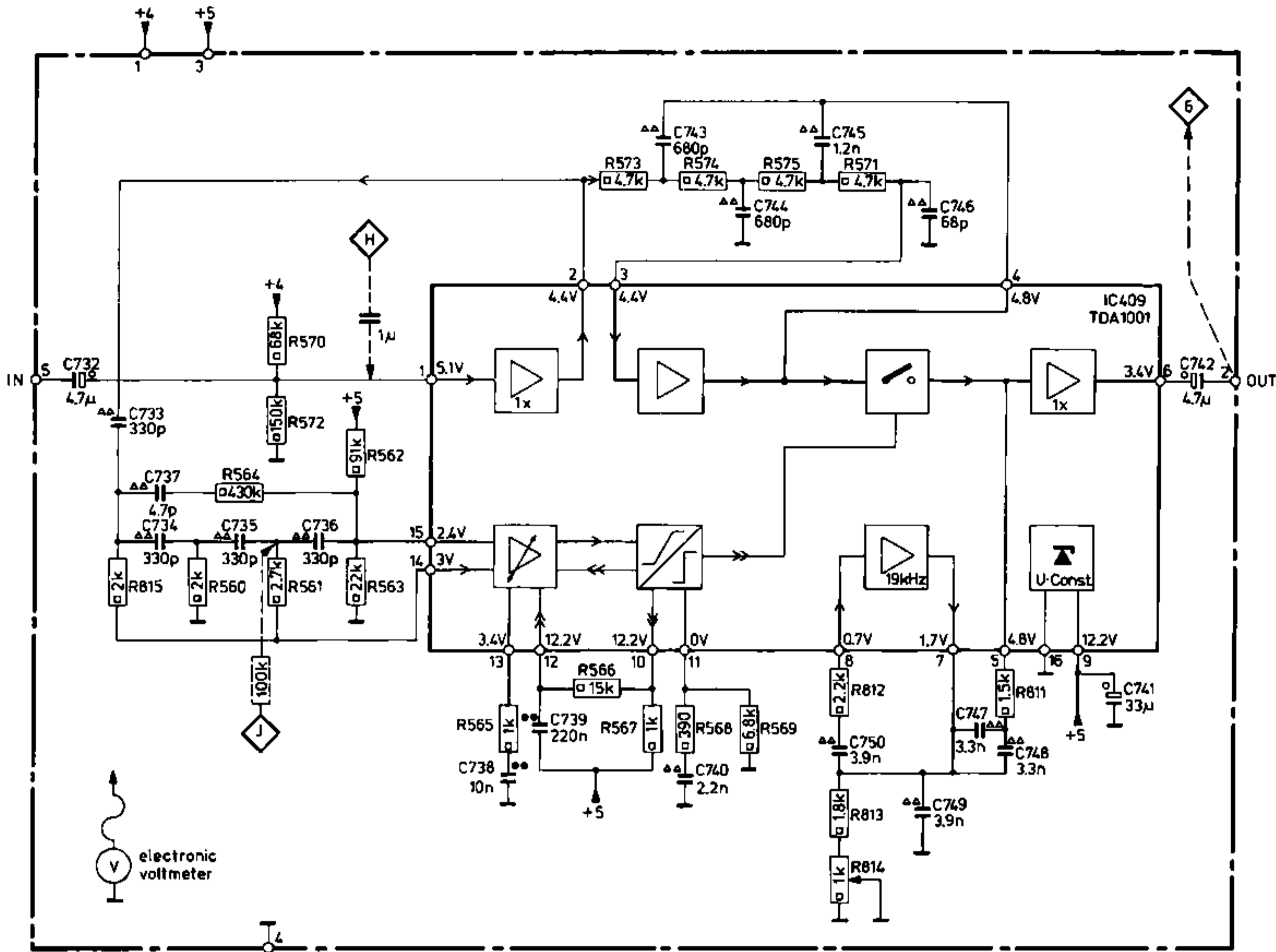
6051A

**ELECTRICAL PARTSLIST**

<b>-D-</b>					<b>-TS-</b>			
431	BB117	4822	130	30913	400,401	BF494	5322	130 44195
432,433	BA315	4822	130	30843	402	BF495	4822	130 40947
434,436	BA315	4822	130	30843	403	BF240	4822	130 40902
435	AA119	5322	130	40229	404	BF494B	} set 40835	4822 130 40949
437+438	2xAA119	4822	130	30312	405	BF495D		
439	BZX79/C9V1	5322	130	30667	406	BF495C		
801,802	BA314	4822	130	30879	407	BF494	5322	130 44195
803,804	BA315	4822	130	30843	408	BC548	4822	130 40938
805	BZX75/C1V4	5322	130	34047				
<b>-S-</b>					<b>-C-</b>			
451		4822	156	30079	676	8.2 pF ± 0.25 pF, 100 V, N150	4822	122 31052
452		4822	157	50832	680	65 pF trimmer	4822	125 50042
453		4822	157	50833	681	65 pF trimmer	4822	125 50017
454		4822	153	10296	684	2.2 nF, 5 %, 63 V	4822	121 50415
455		4822	158	10384	688	220 pF, 2 %, 500 V	5322	121 54059
456		4822	156	20702	690	470 pF, 2 %, 250 V	4822	121 50553
457		4822	156	20704	691	4.7 nF, 2 %, 63 V	4822	121 50539
458		4822	156	20703				
459		4822	156	20706				
460		4822	156	20705				
461,463		4822	153	20219				
462,464		4822	153	50205				
465		4822	153	20219				
466		4822	153	20221				
467		4822	153	50207				
468		4822	153	50208				
469		4822	153	20222				
481		4822	526	10011				
					<b>-R-</b>			
					519	VDR	4822	116 20069
					453	1 kΩ	4822	100 10021
					576+577	47 kΩ+17 kΩ+5 kΩ	4822	102 20072
					<b>-Miscellaneous-</b>			
					IC409	TDA1001	4822	209 80284
					IC411	TBA810S	4822	209 80297
					IAC-UNIT		4822	219 80253
					XR482		4822	242 70249
					LA483	12 V - 100 mA	4822	134 40243

IAC-UNIT 4822 219 80253

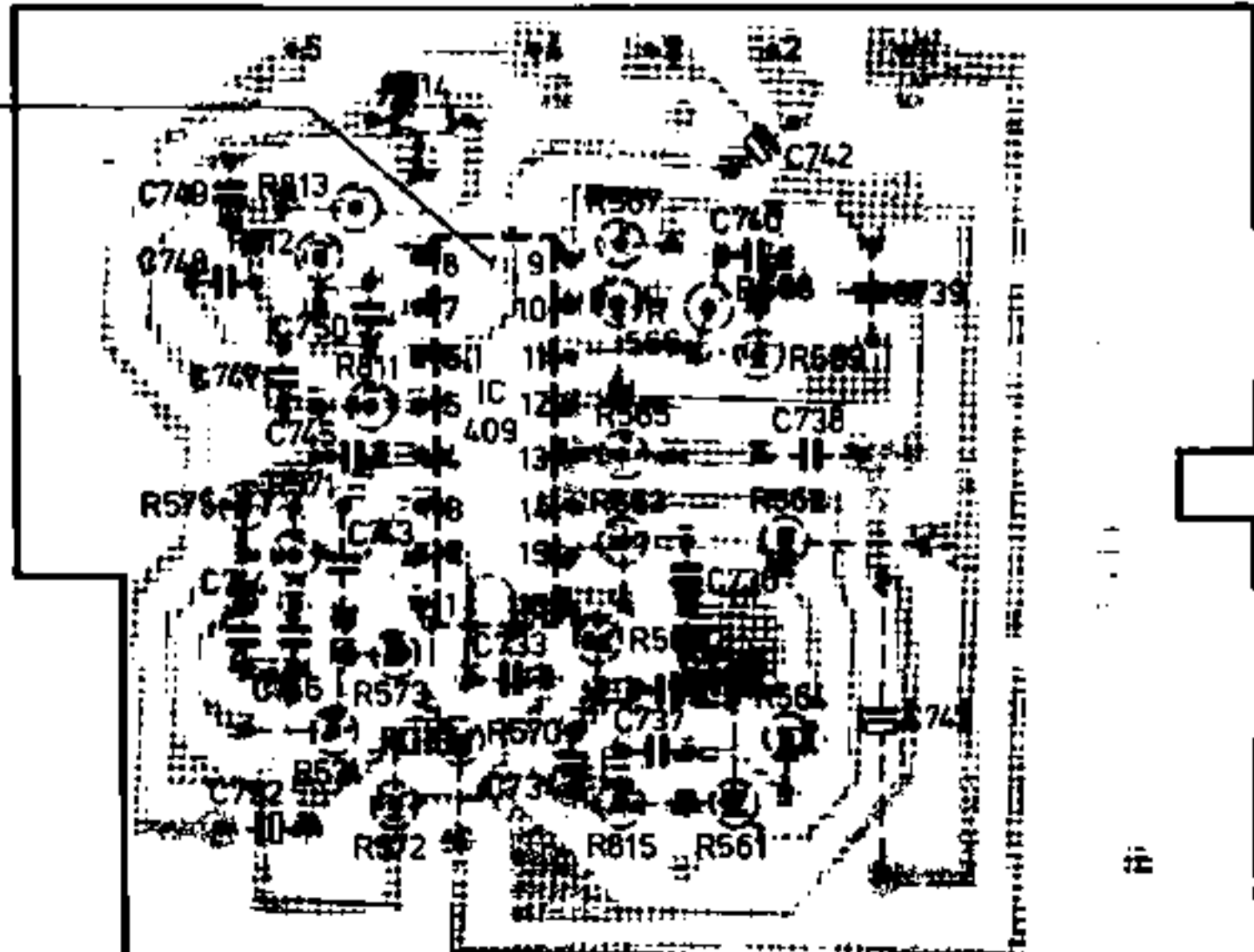
R	815.	560.	564.	570.	572.	561.	562.	563.	565.	566.	573.	567.	574.	568.	575.	569.	812-814.	571.	811.
C	732.	733.	734.	737.	735.	736.	738.	739.	743.	740.	744.	745.	750.	749.	746.	747.	748.	741.	742.



10085C2

MISC.	IC409																MISC.
C	746...	749	748	747	746	750	746...	C									
	733...745	744	732	745	743	733	734	737	735	736	740	742	738	739	741	733...745	
R	560...564	563 560 561 562 564														560...564	R
	561...811	575	571	574	573	572	570	565...567	568	569	561...811						
	811...	812	813	811	814	815	811...										

- IC409
- 1 = 5.1V
  - 2 = 4.4V
  - 3 = 4.4V
  - 4 = 4.8V
  - 5 = 4.8V
  - 6 = 3.4V
  - 7 = 1.7V
  - 8 = 0.7V
  - 9 = 12.2V
  - 10 = 12.2V
  - 11 = 0V
  - 12 = 12.2V
  - 13 = 3.4V
  - 14 = 3V
  - 15 = 2.4V
  - 16 = 0V

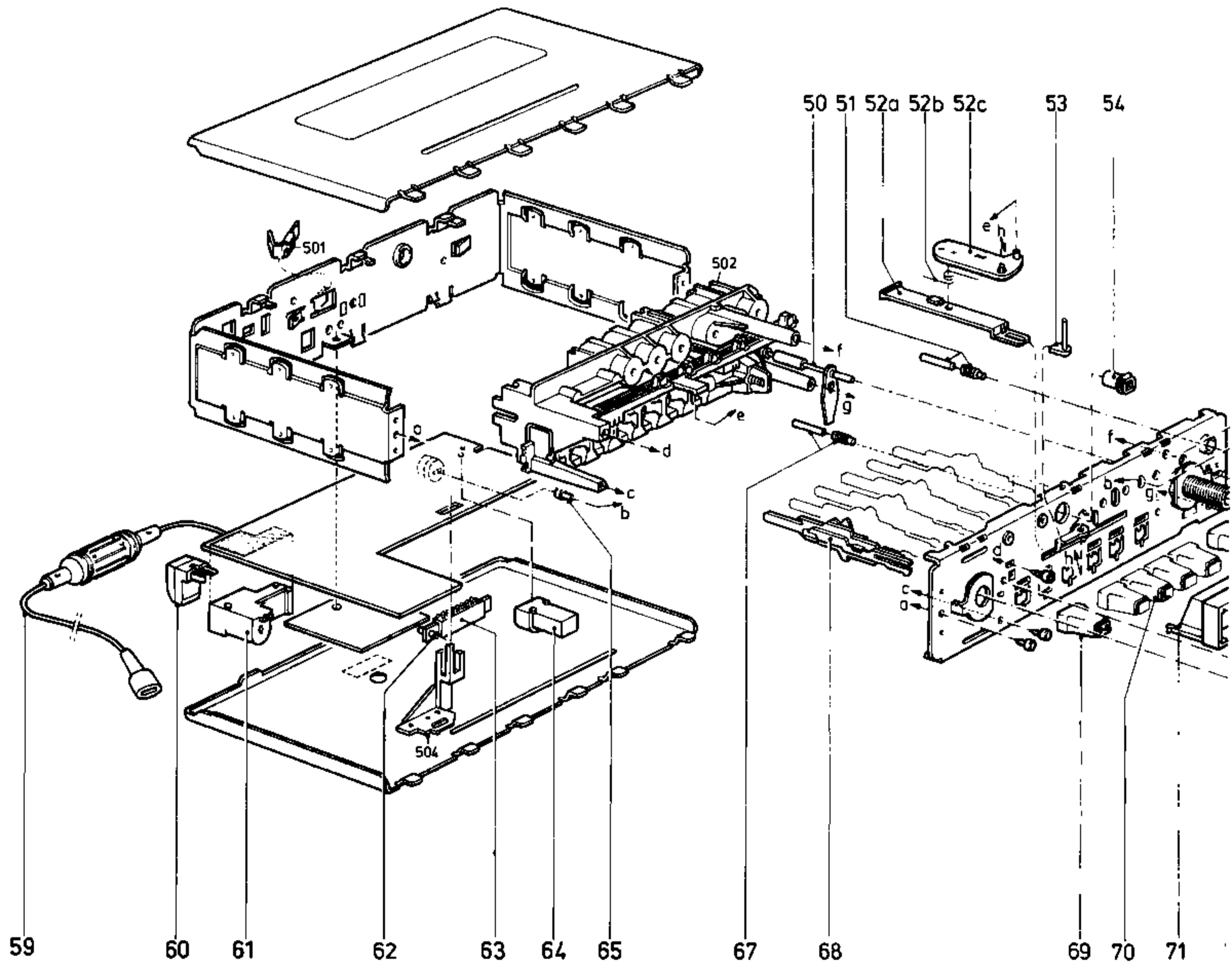


7853B

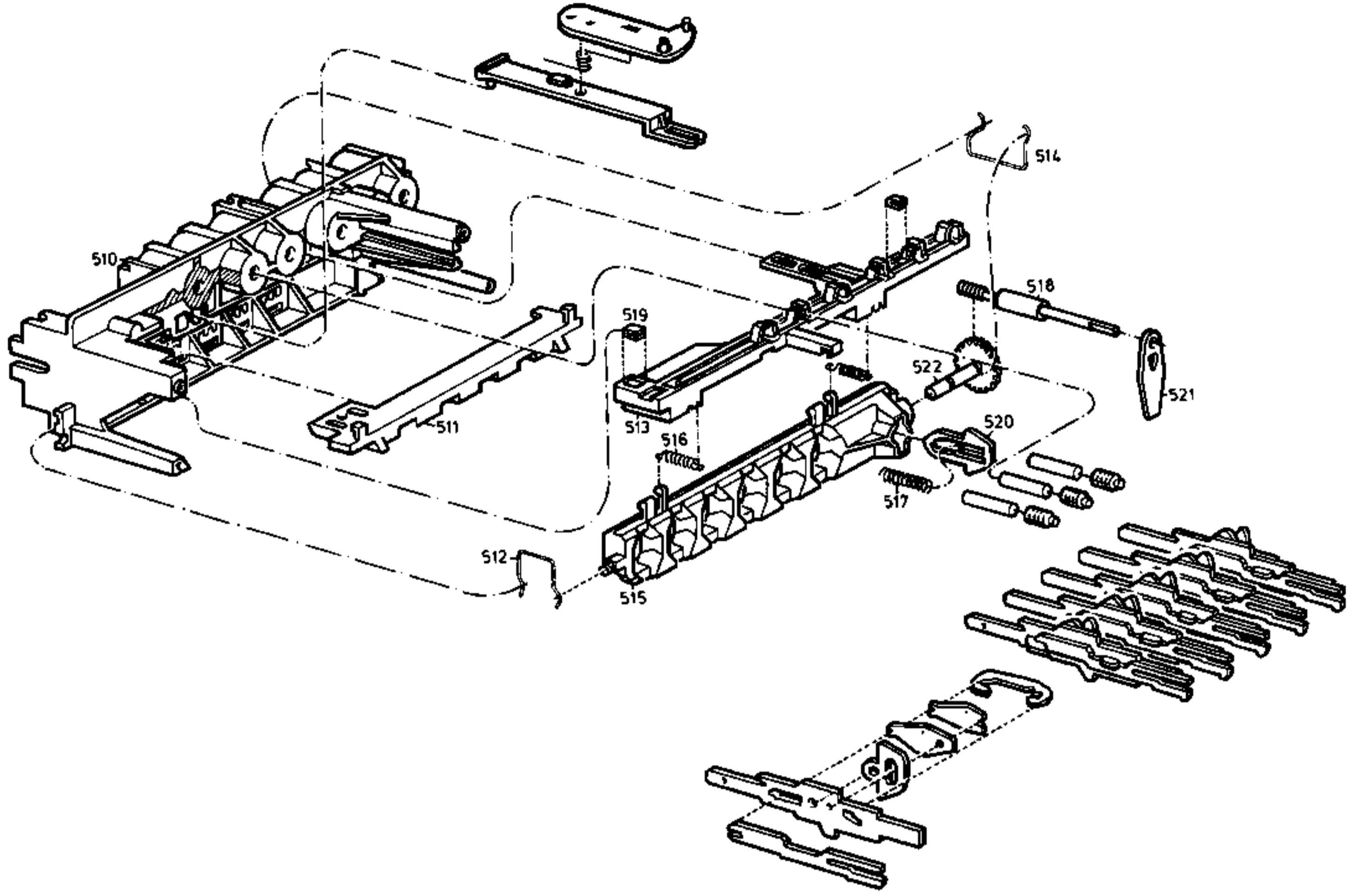
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 51 4822 526 10115  
 52a+b+c 4822 404 20184  
 53 4822 450 80429  
 54 4822 255 20068  
  
 55 4822 535 90981  
 57 for /80/84/85 4822 331 20062  
 57 for /82 4822 331 20063  
 57 for /88 4822 331 20064  
 58a+b-c 4822 310 10081  
  
 59 4822 321 20261  
 60 4822 264 30096  
 61 4822 267 40227  
 62 4822 535 90892  
 63 4822 277 30587

64  
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 77  
 78  
 79a+b

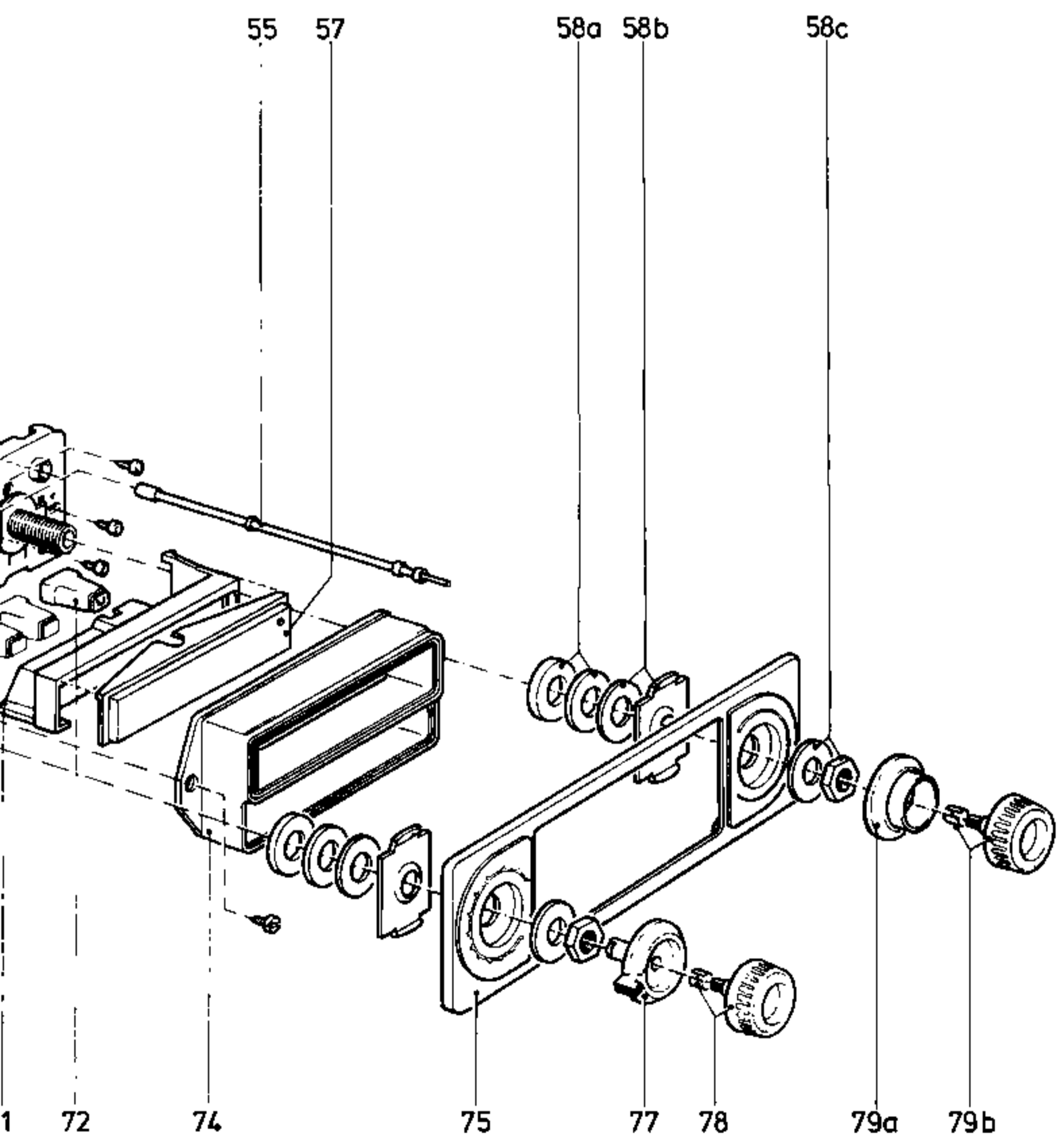
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 4822 466 70287  
 4822 410 21707  
 4822 423 50246  
 4822 459 50184  
  
 4822 411 50392  
 4822 413 40654  
 4822 413 40655







6681C



10180E12

CS55924