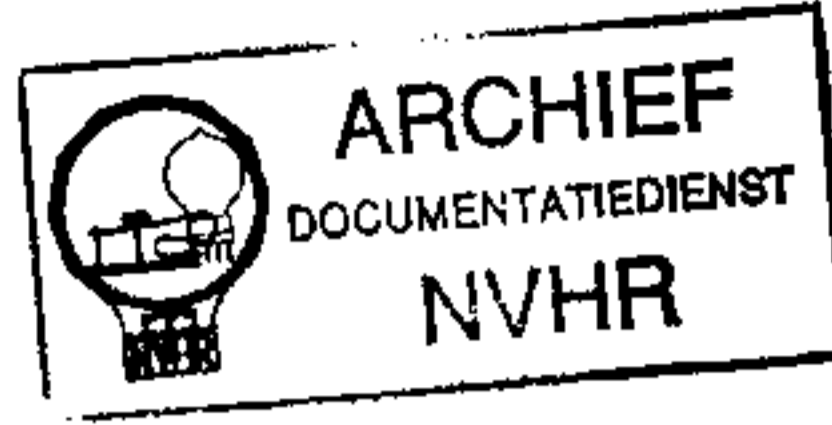


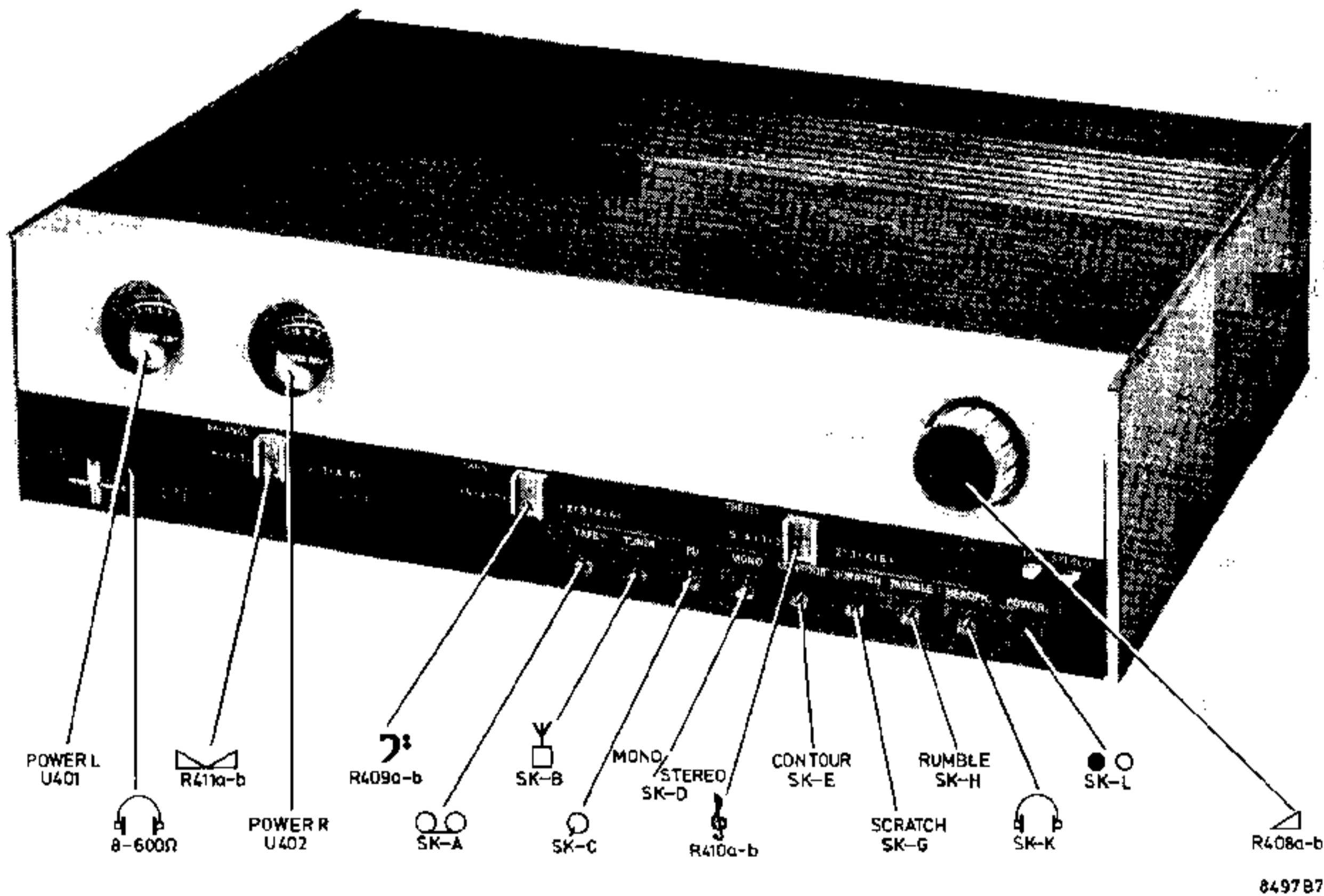
Service  
Service  
Service

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

Ned. Ver. v. Historie v/d Radio

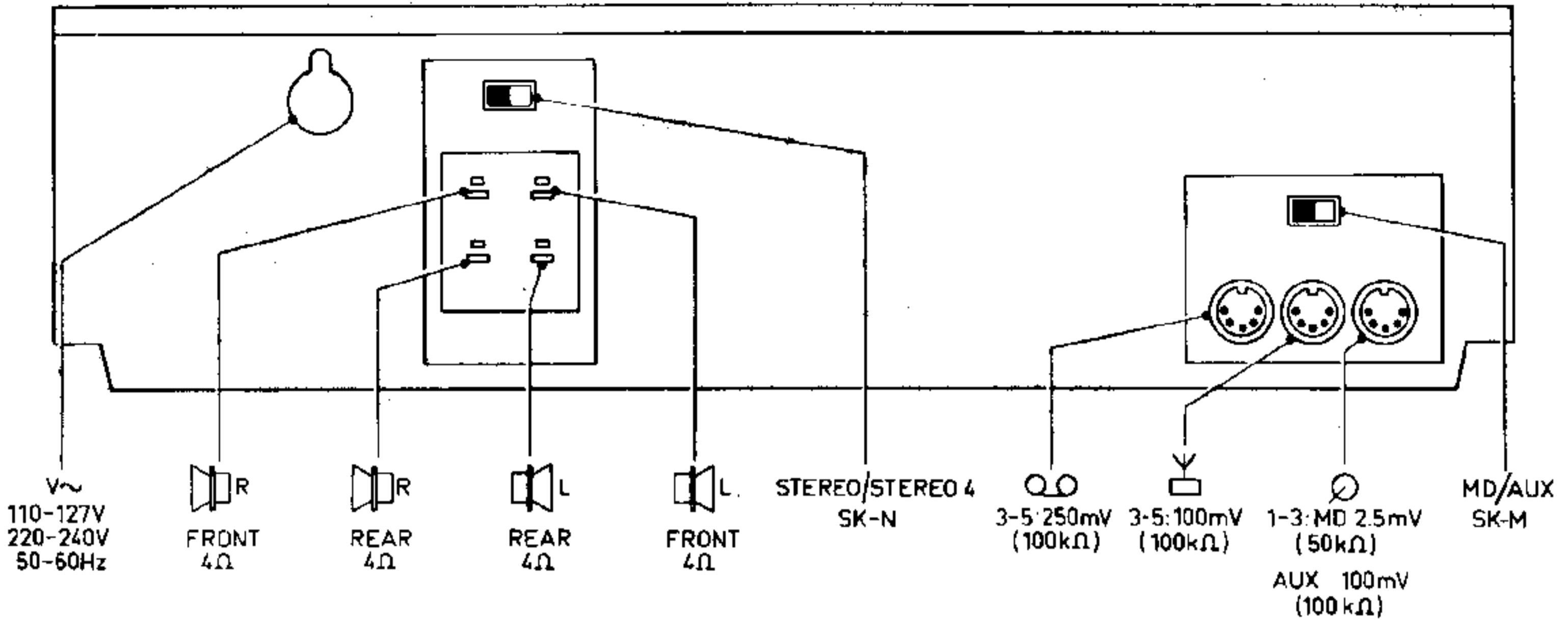


# Service Manual

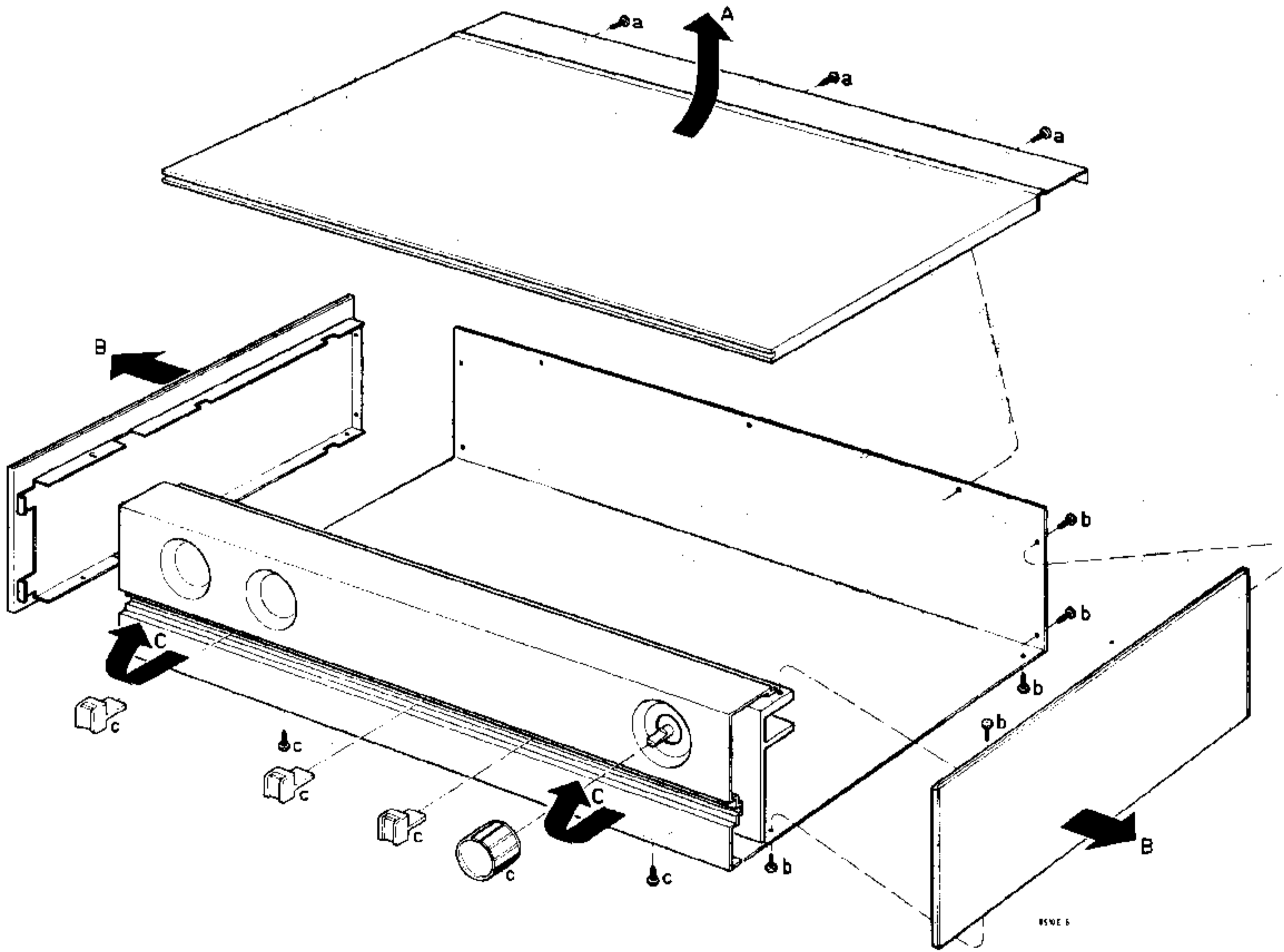


8497B7



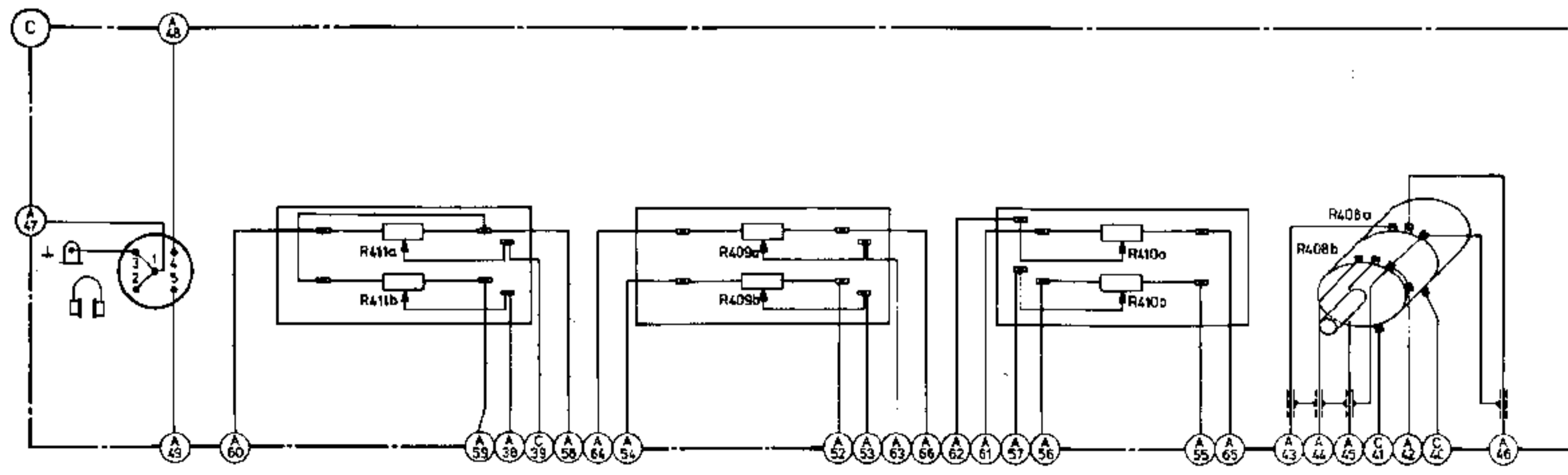
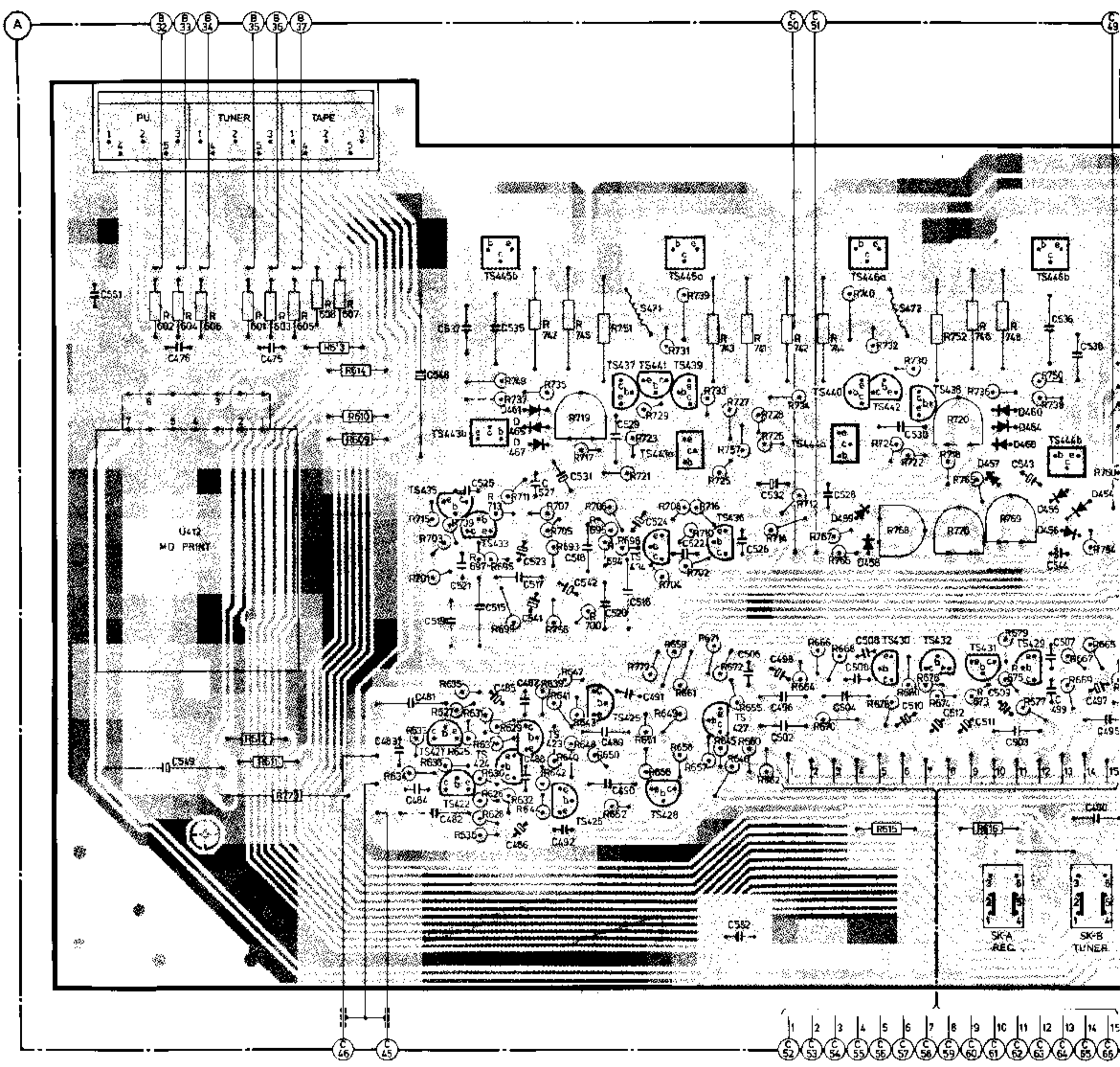


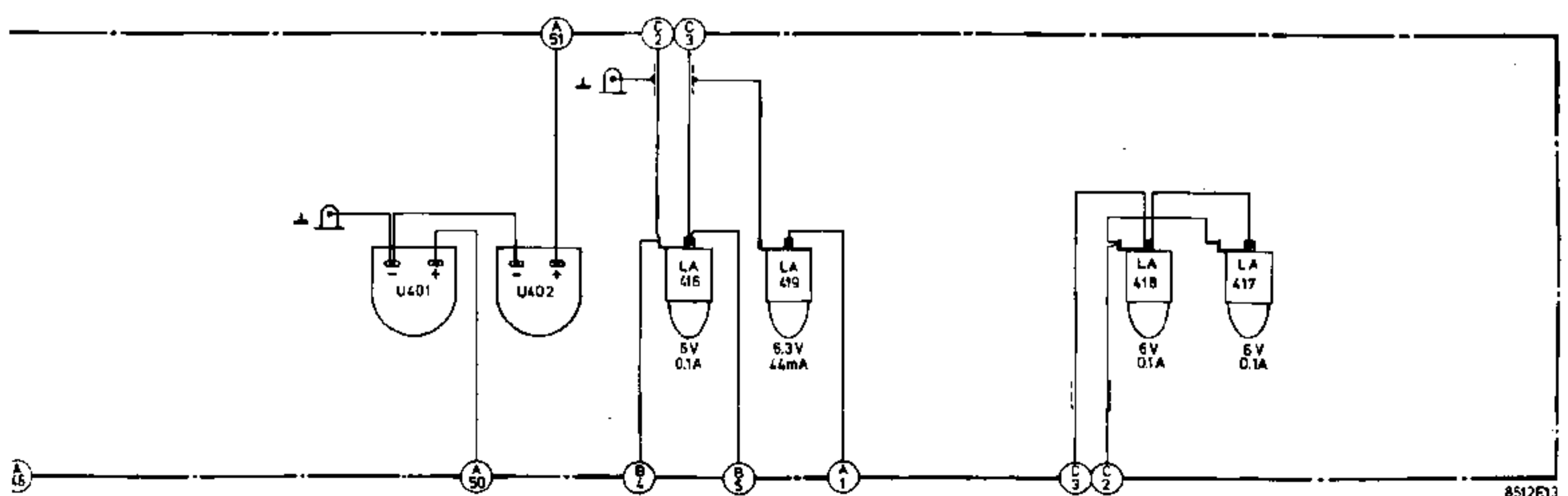
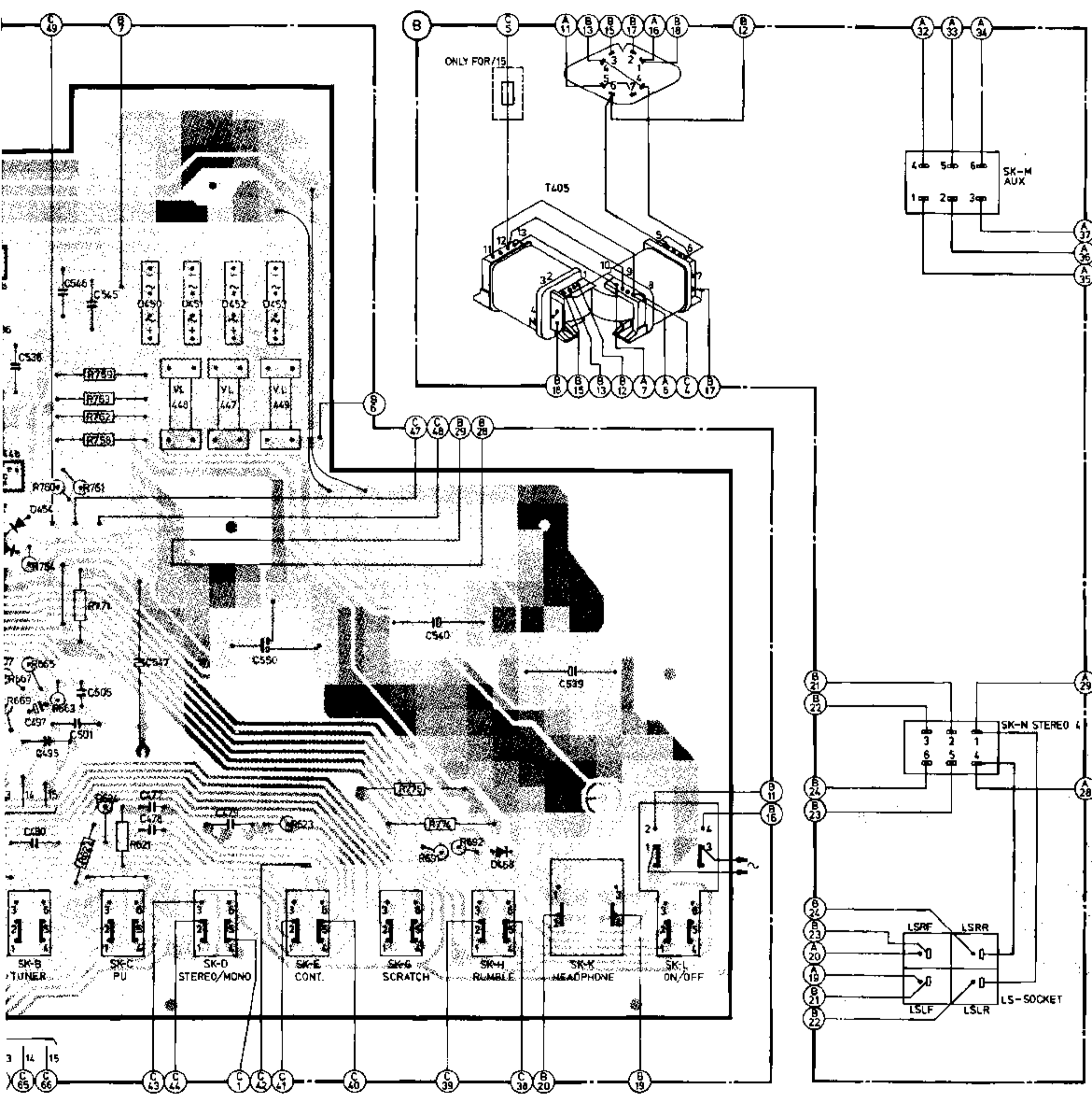
8509C 6



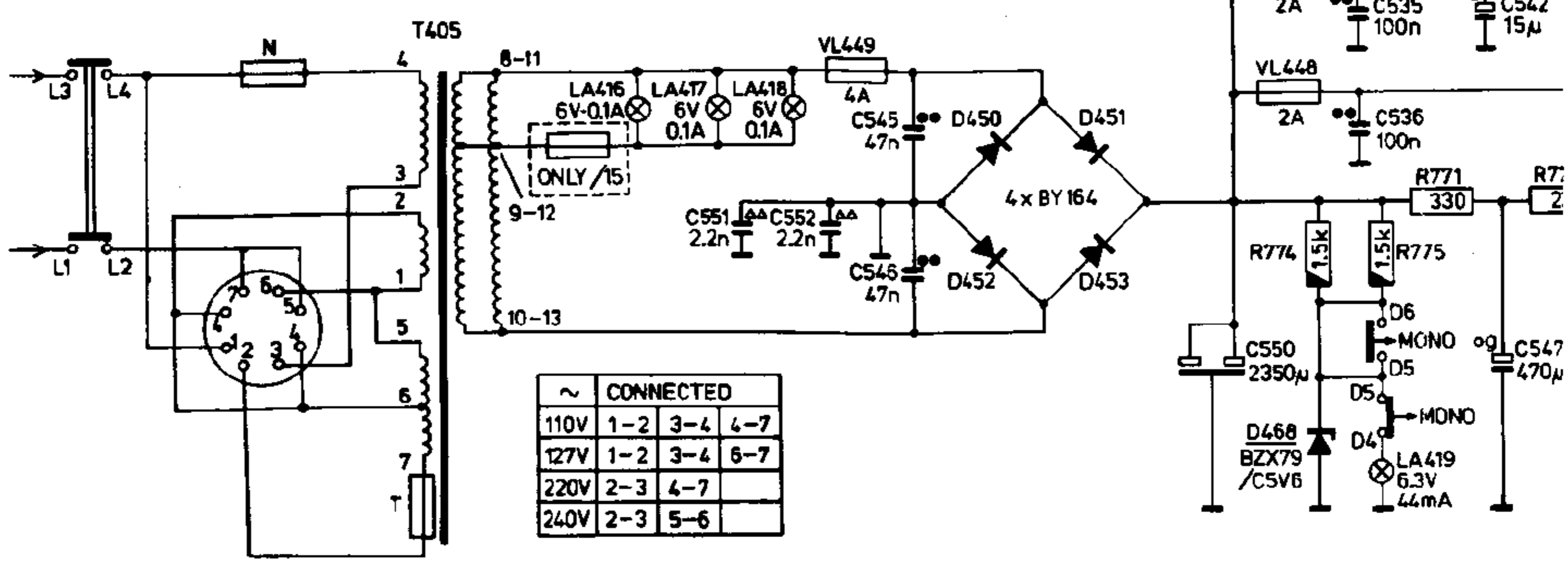
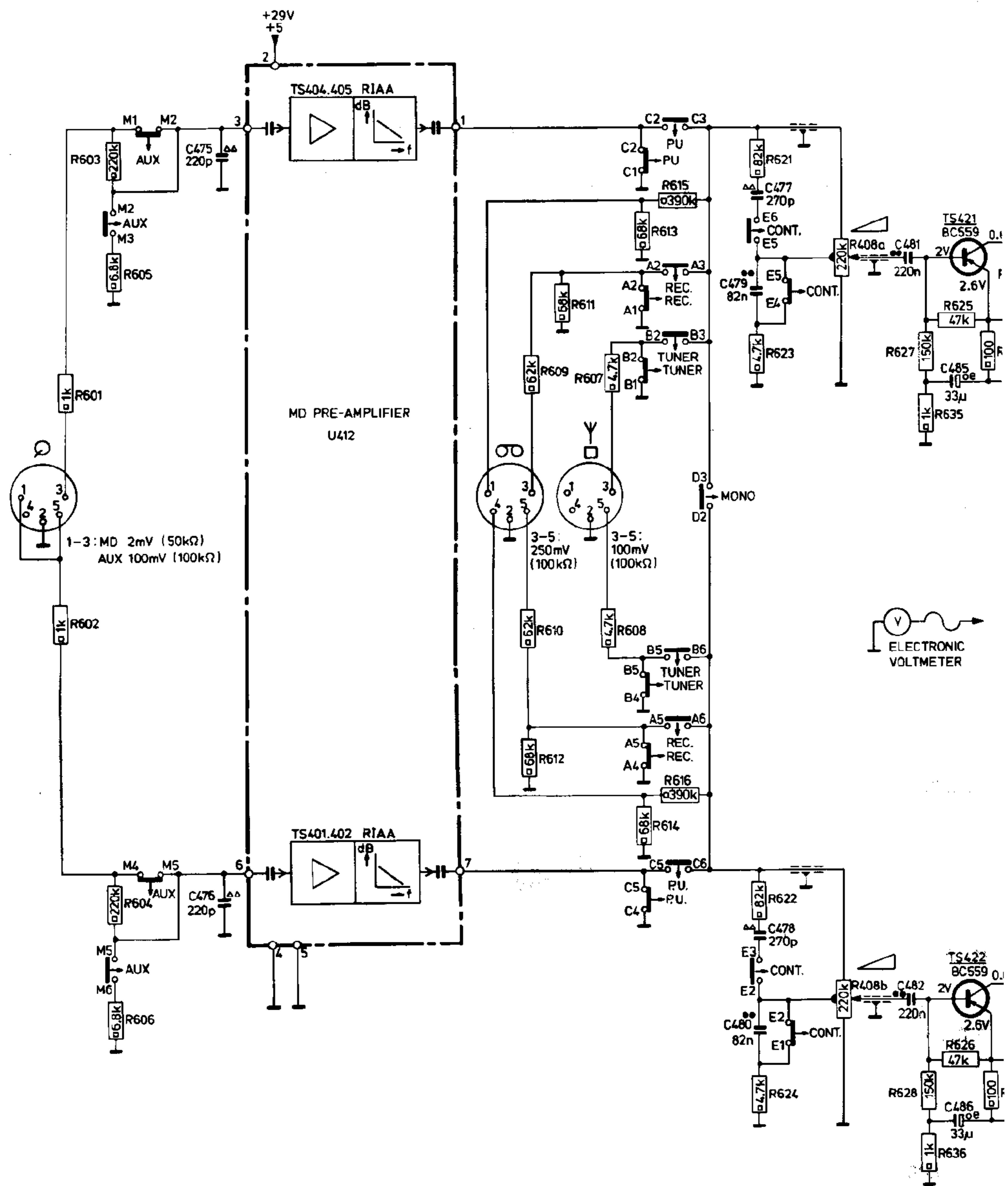
CS55083

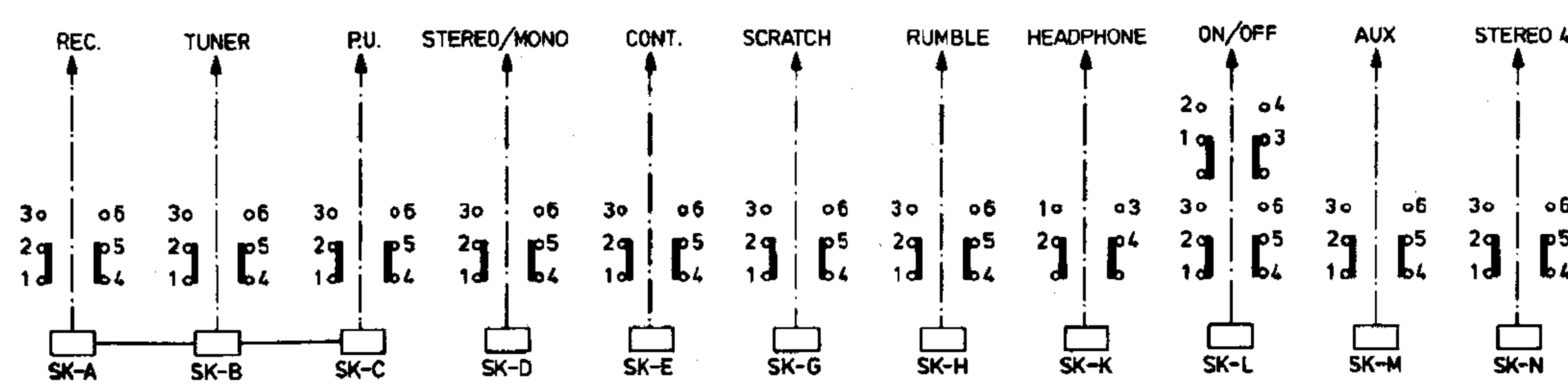
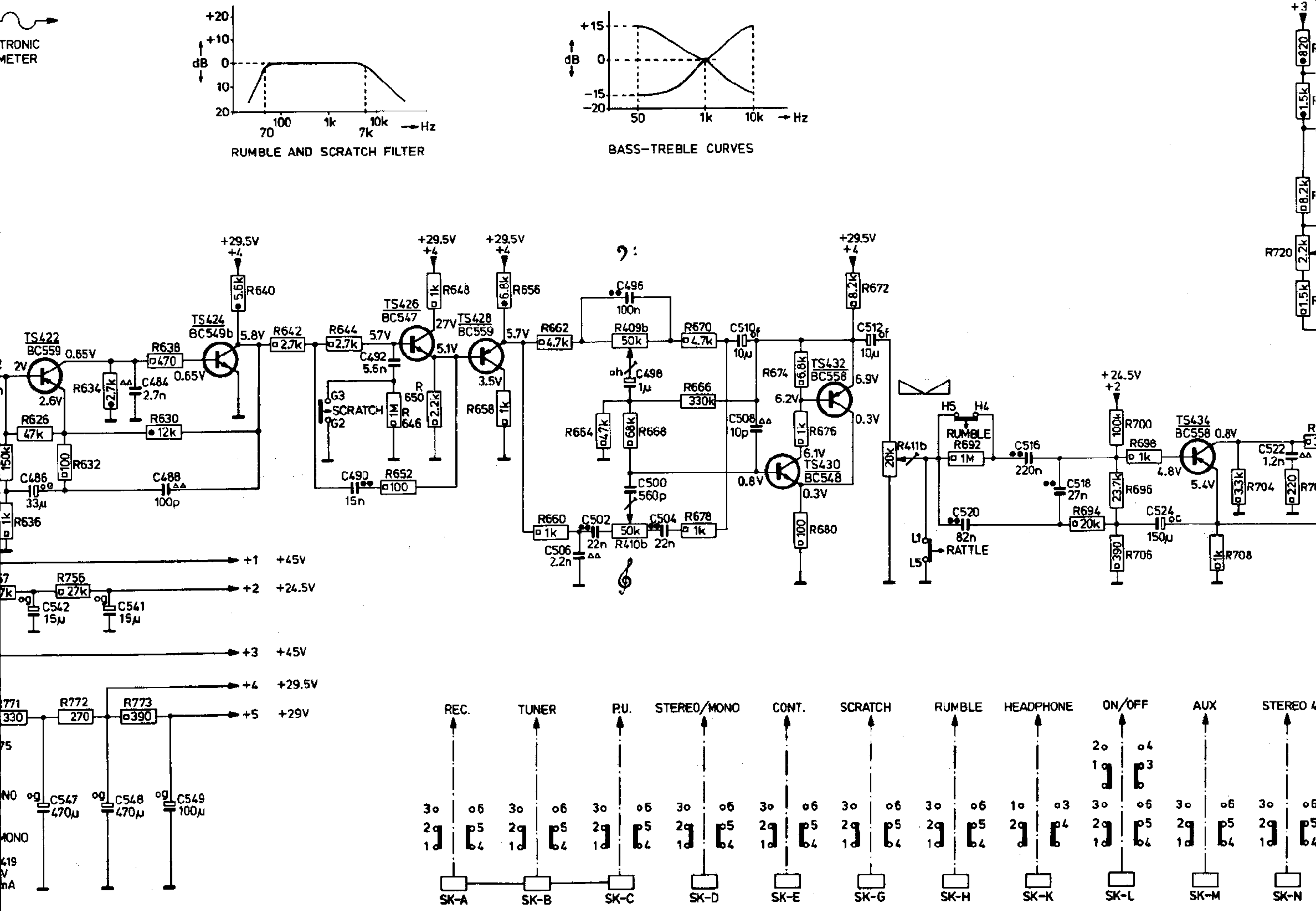
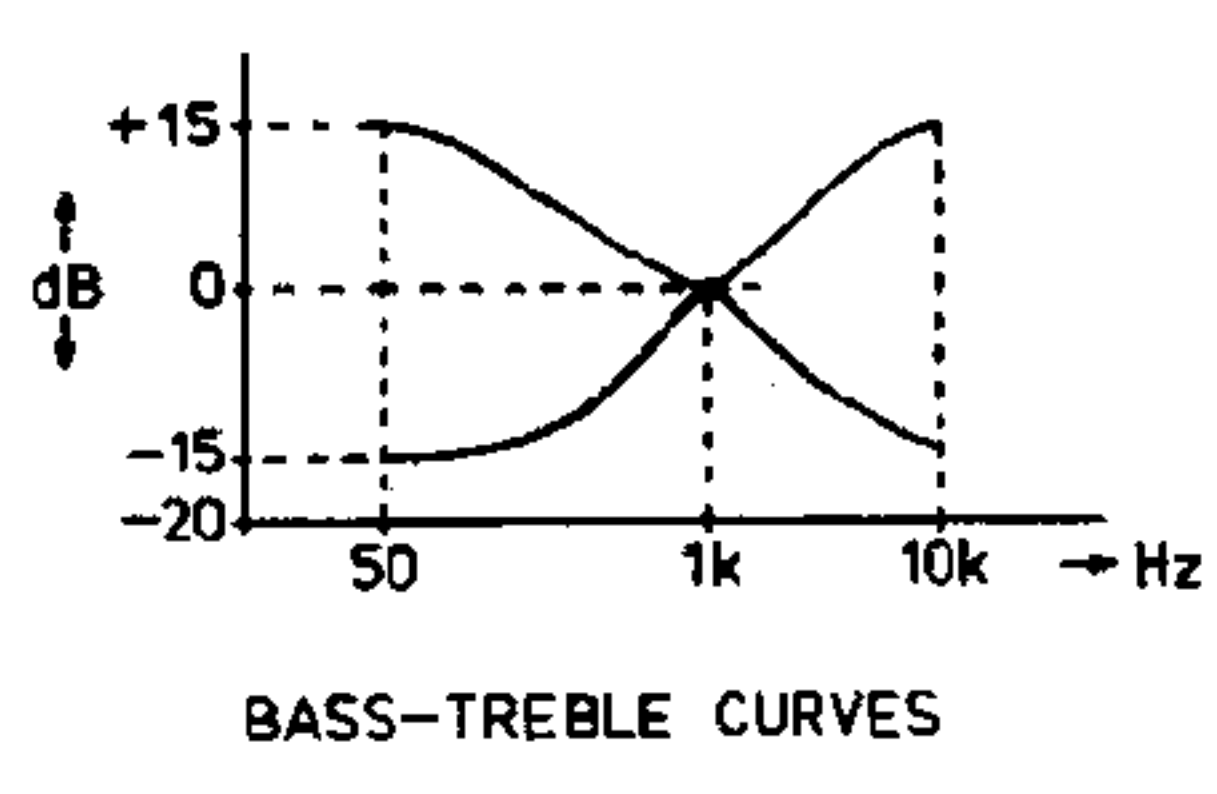
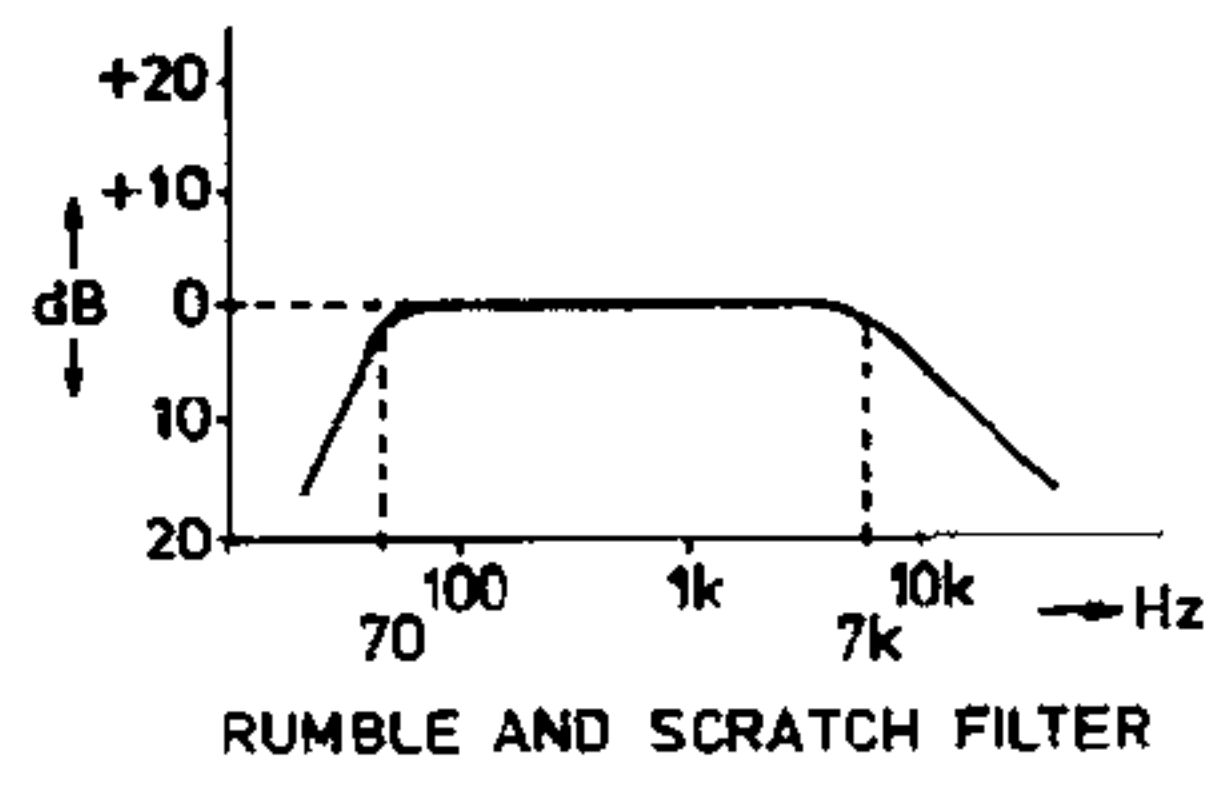
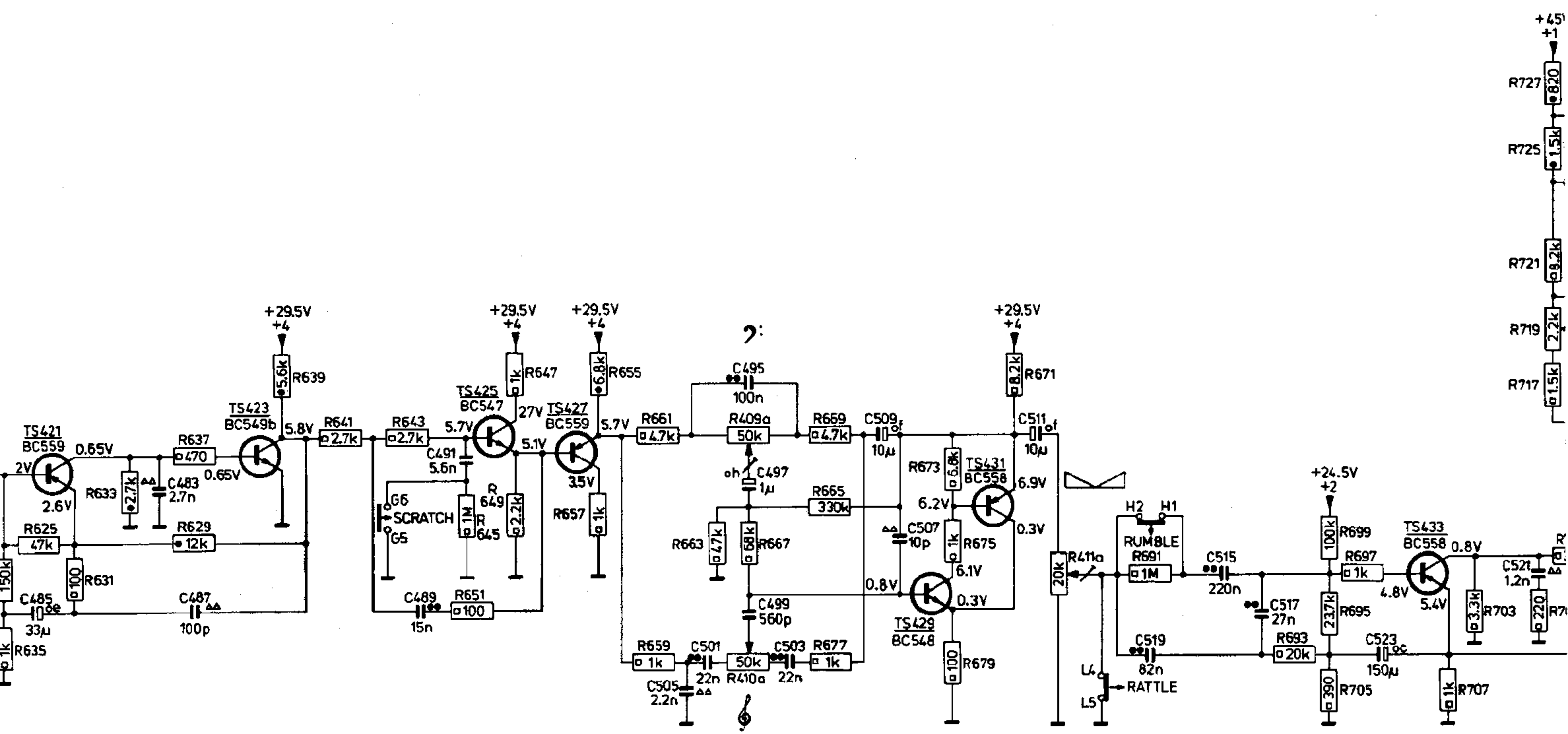
R	601-614	411a 411b	703 713 737 735 719 625-638 693-700 409a 409b 639-652 723 721 725-729 710 702 712 410a 410b 724 730 720 752 748 406a 408b 750 616
R		773	701 709 711 749 756 715-717 747 745 751 772 704-708 731 739 655-662 757 732-734 740-744 714 722 718 736 760-771 765 738 663-680
C		476	481-484 485 486-492 496 495
C	551	549	548 537 535 541 542 515-527 529 531 552 506 502 532 504 500 508 528 530 510 512 511 509 503 543 507 544 536 538
MISC:	U412	TS433 TS443b TS445b	D461 D465 D467 S471 TS445a TS443c TS421-TS428 TS434-TS442 TS444a TS446a S 472 D459 D458 TS430 TS432 D460 TS431 D464 D457 SK-AT TS446b TS444b SK-B



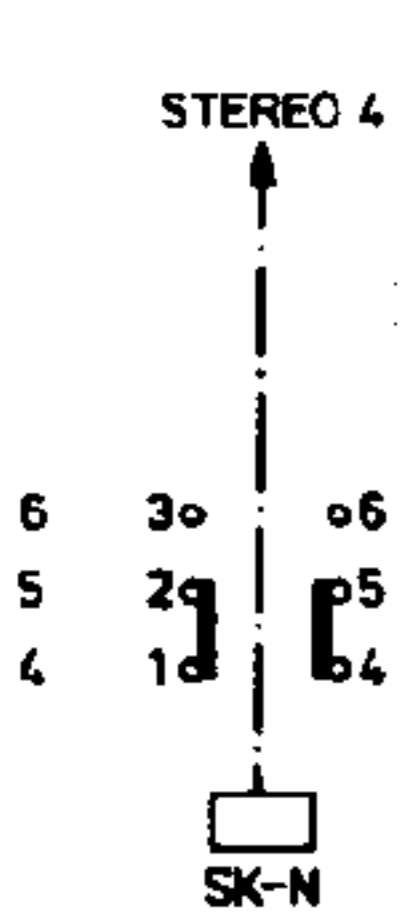
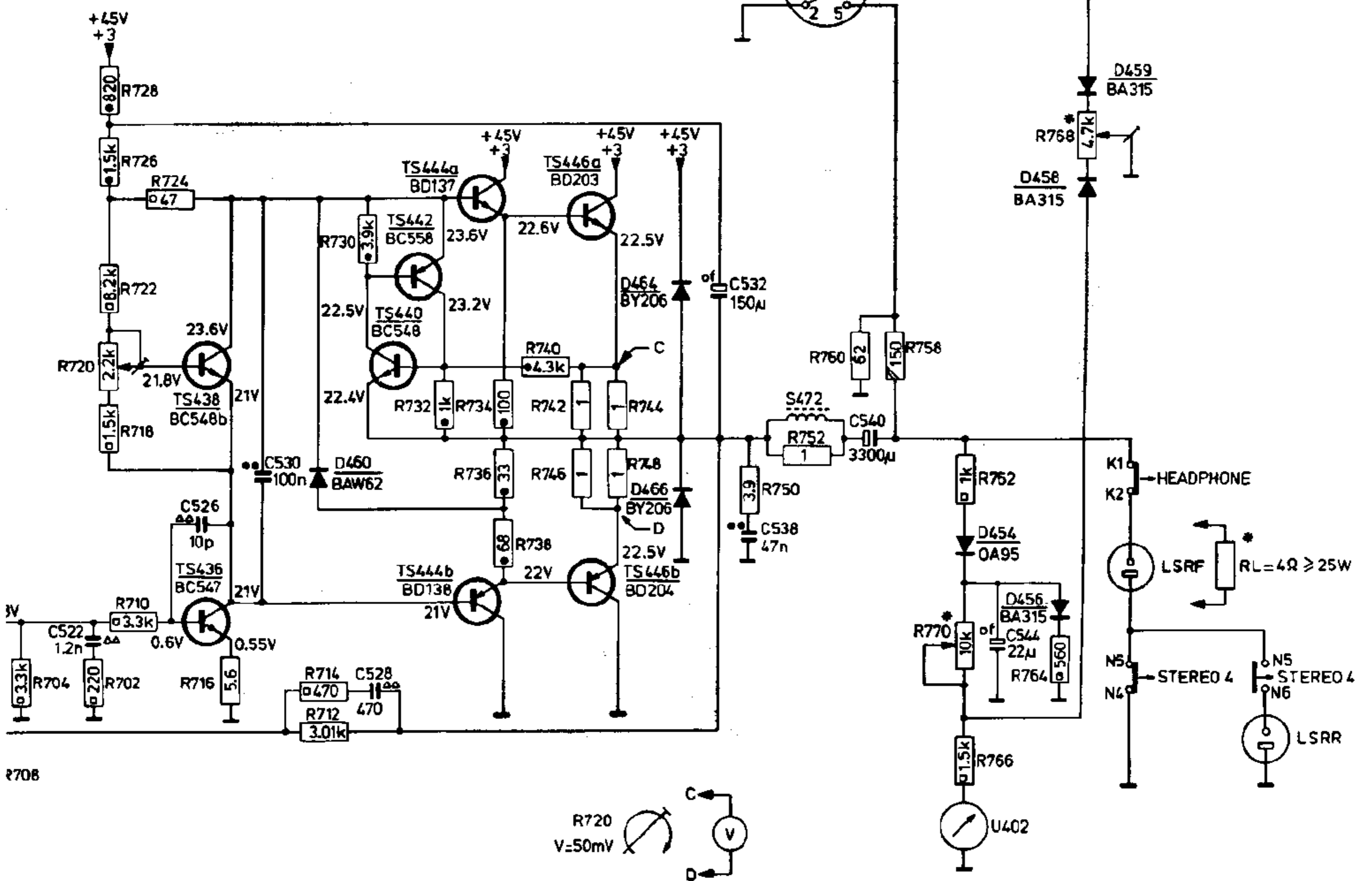
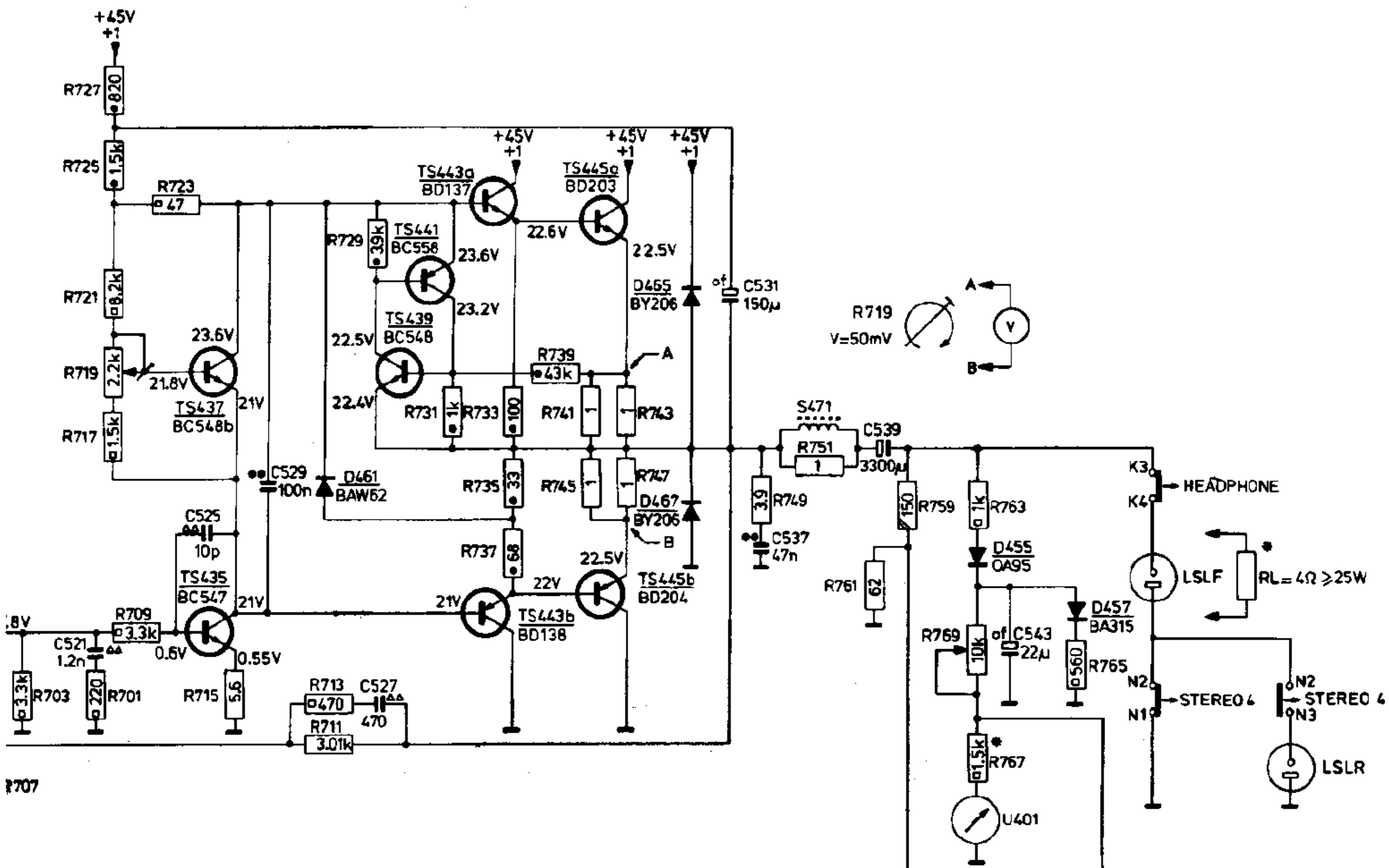


MISC.	U412 T405	LA416...418 VL449	D450...453	VL447,448 D468 LA419	TS421,42
C	475,476	551 552	545,546	477...480	550,536,535,481,482,485,486,542,
R	601...606	607...616		621...624	408a,b,625...626,757,771...775,





TS435...438	D460.461	TS439...444b	TS445a...448b	D464...467	S471.472	D454...459	U401.402	MISC.
521 522	525 526	529.530.527.528		537 538	531 532	539 540	543 544	C
701.706.717...728.709...716	729...738	739...748		749...752	758...770	753...756		R



- CARBON RESISTOR E24 SERIES 0.125W 5%
  - CARBON RESISTOR E12 SERIES 0.25 W <math>\le 1M\Omega</math> 5%
  - CARBON RESISTOR E12 SERIES 0.5 W <math>\le 1M\Omega</math> 10%
  - CARBON RESISTOR E12 SERIES 1 W <math>\le 1.5M\Omega</math> 5%
  - CARBON RESISTOR E12 SERIES 1 W <math>\le 2.2M\Omega</math> 10%
  - PLATE CERAMIC CAPACITOR
  - FLAT FOIL POLYESTER CAPACITOR
  - MINIATURE ELECTROLYTIC CAPACITOR
- c = 6.3V  
 e = 16V  
 f = 25V  
 g = 40V  
 h = 63V

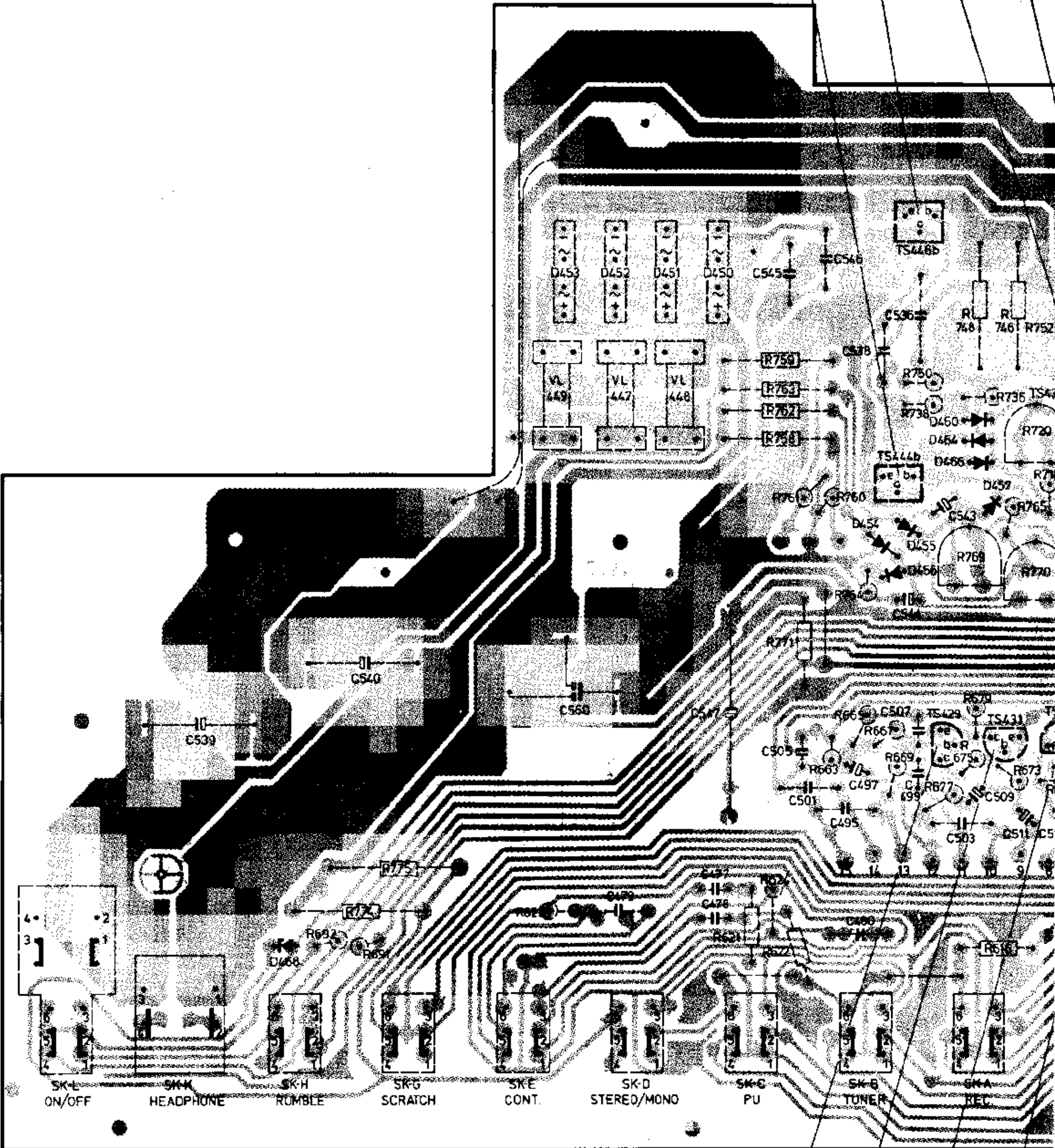
* SIGNAL TO		U401	U402
1kHz			
$V_{RL} = 1.42V \sim$	R769	0.5W	0.5W
$V_{RL} = 9.0V \sim$	R768	35W	35W

8179 F7

CS55085

R						621-624		616 750 748 752 72
R			775 774 692 691			758 759		738 746 760-771 736
C						477-479	480 495	497 499
C		539 540		550		545-547 505 501	538 536 544 507 543 503 509 511	512 5
MISC	SK-L	SK-K	D468 SK-H	SK-G VL447-VL449 SK-E D450-D456 SK-D		SK-C D466 TS429	SK-B TS444b TS446b SK-AD457 D464 TS	

<u>TS444b</u>	<u>TS446b</u>	<u>TS438</u>	<u>TS442</u>
e=22.0V	e=22.5V	e=21.0V	e=23.6V
b=21.0V	b=22.0V	b=21.8V	b=22.5V
c=0V	c=0V	c=23.6V	c=23.2V

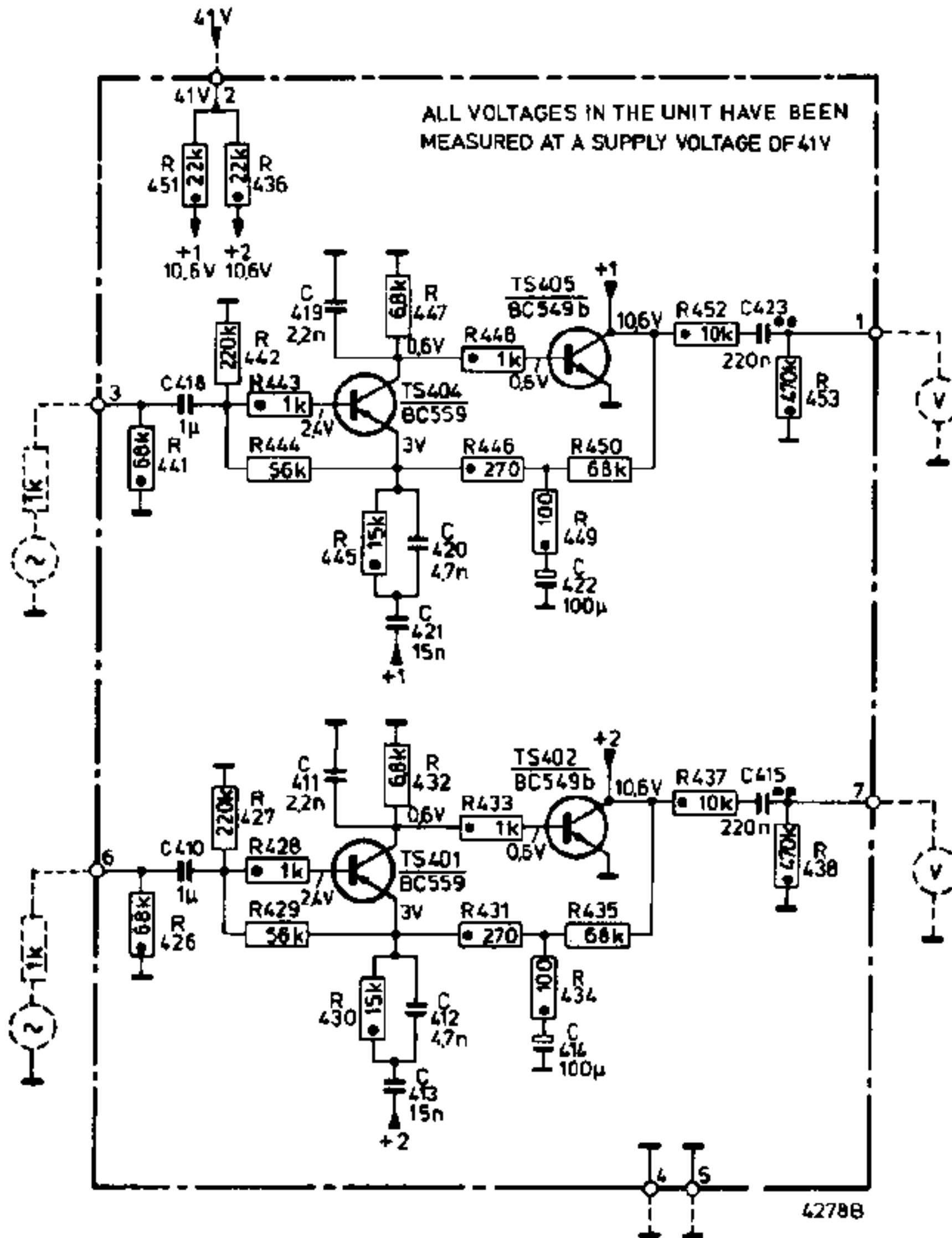


<u>TS429</u>	<u>TS431</u>	<u>TS432</u>	<u>TS430</u>
e=0.3V	e=6.9V	e=0.3V	e=0.3V
b=0.8V	b=6.2V	b=6.2V	b=0.8V
c=6.1V	c=0.3V	c=6.9V	c=6.1V





# MD-PU PRE-AMPLIFIER



Carbon resistor E12 series

0,25 W < 1 MΩ 5 %  
> 1 MΩ 10 %



Flat-foil polyester capacitor

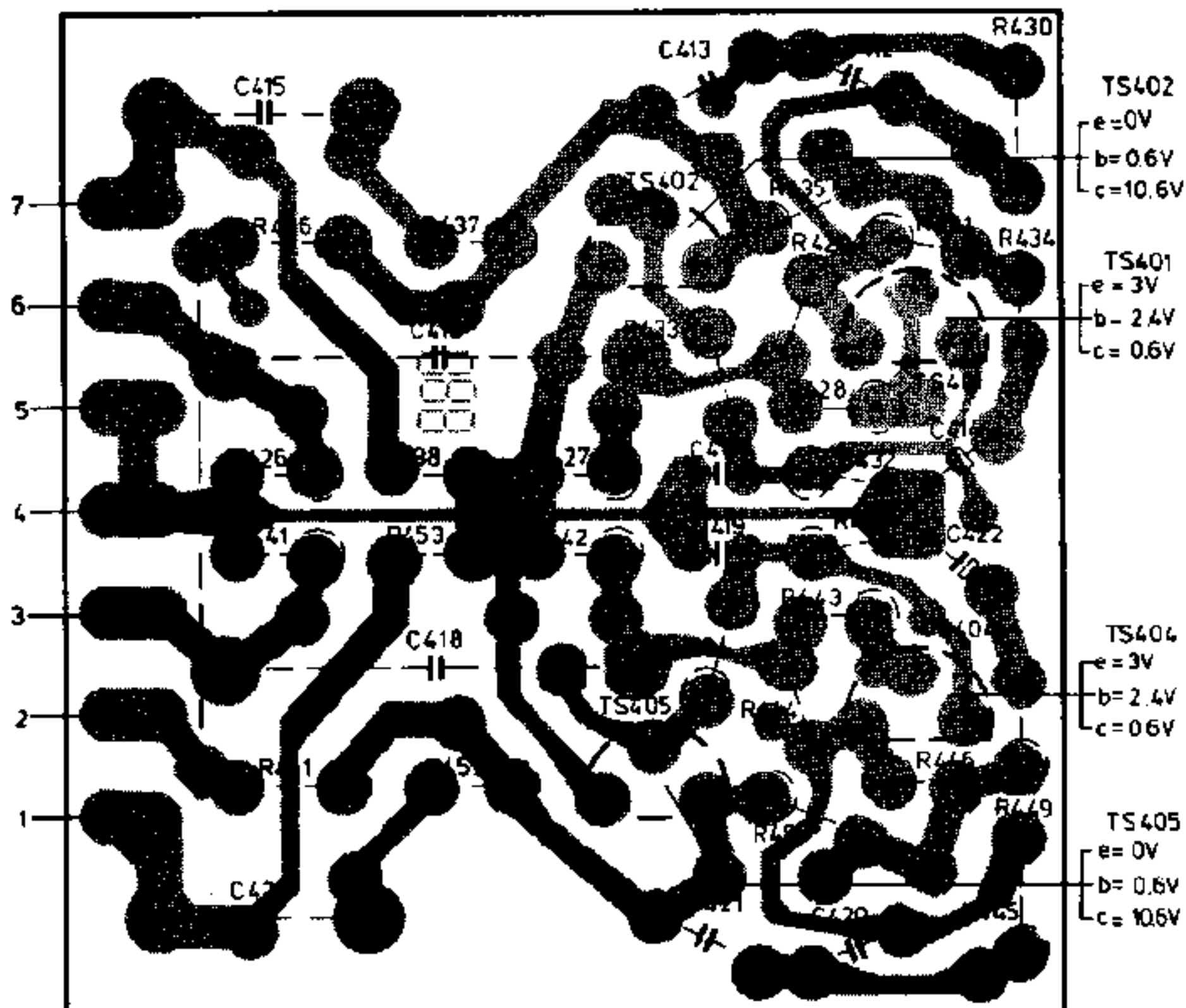


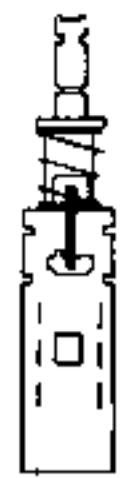
Miniature electrolytic capacitor



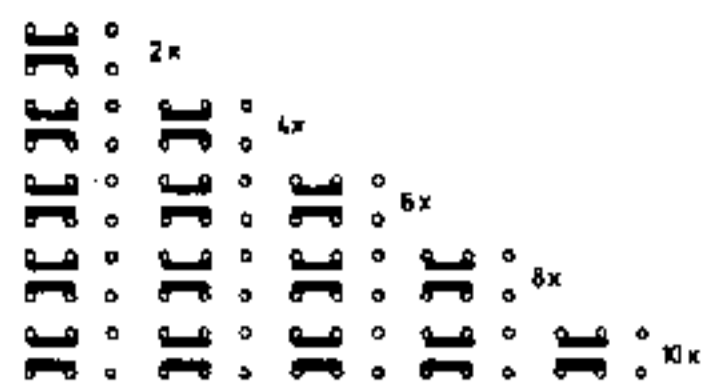
TS401, 402  
404, 405

MISC.	TS405, 402				TS401, 404			
C	415 423	410 418	413 411 419-421	412	414	422		
R	428 436	438 437	427 433	435	428+432	434		
R	441 451	453 452	442	448	450	443+447	449	





4822 276 10558  
 4822 276 10562  
 4822 276 10561

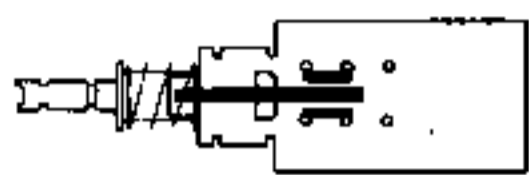


4822 276 10543  
 4822 276 10544  
 4822 276 10545  
 4822 276 10546  
 4822 276 10547

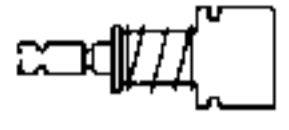


PUSH-PULL

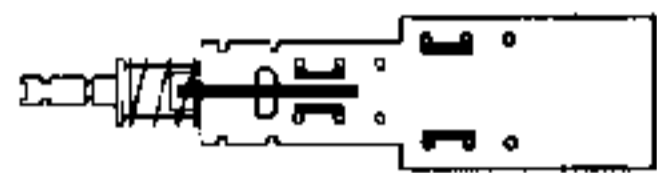
PUSH-PUSH



4822 276 10539



4822 276 10559

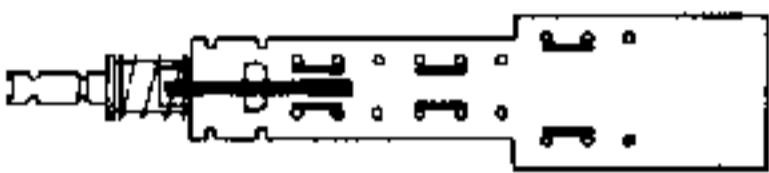


4822 276 10541



4822 404 10233  
 bracket for transforming a push-pull  
 switch into a push-push one

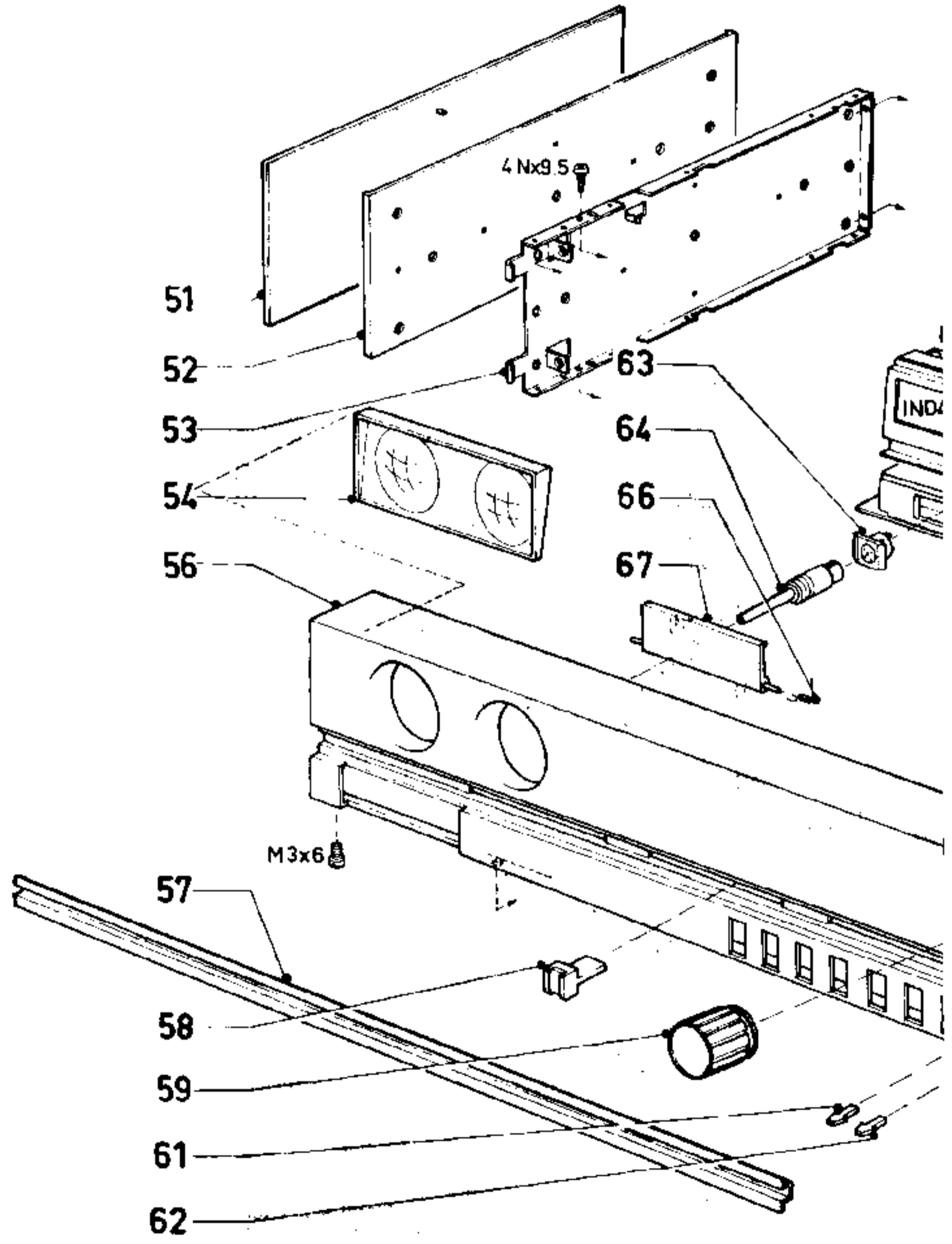
4822 404 10234

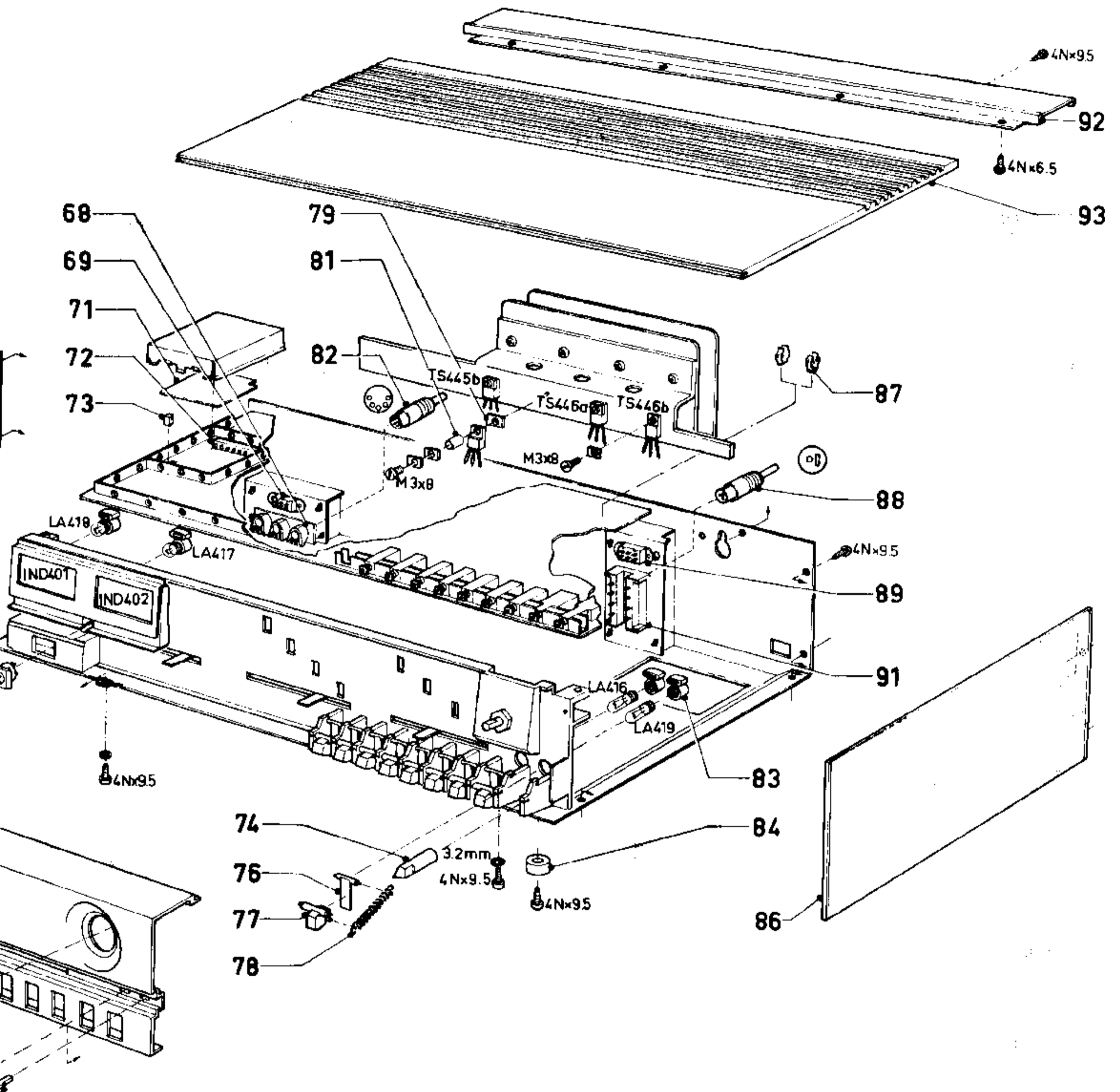


4822 276 10542


6382 B

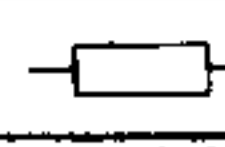
- 51+52+ 4822 426 20018
- 53+86
- 52+53+ 4822 426 20018
- 86+51
- 53+86+ 4822 426 20018
- 51+52
- 54 4822 450 60101
- 56 4822 426 50194
- 57 4822 454 10342
- 58 4822 411 60243
- 59 4822 413 50807
- 61 4822 381 10385
- 62 4822 381 10384
- 63 4822 267 40125
- 64 4822 264 40092
- 66 4822 492 40589
- 67 4822 426 60095
- 68 4822 267 40209
- 69 4822 277 20091
- 71 4822 214 50127
- 72 5322 267 64027
- 73 4822 417 10645
- 74 4822 535 90931
- 76 4822 404 10206
- 77 4822 411 50277
- 78 4822 492 31088
- 79 4822 255 40112
- 81 4822 532 50991
- 82 4822 264 40023
- 83 4822 255 10007
- 84 4822 462 70869
- 86 51 4822 426 20018
- 52+53
- 87 4822 492 60063
- 88 4822 264 30041
- 89 4822 277 20091
- 91 4822 267 50194
- 92 4822 460 10372
- 93 4822 426 40068






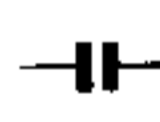
8376C2

-TS-				
421	BC559	4822	130	40963
422	BC559	4822	130	40963
423	BC548	4822	130	40938
424	BC548	4822	130	40938
425	BC547	5322	130	44257
426	BC547	5322	130	44257
427	BC559	4822	130	40963
428	BC559	4822	130	40963
429	BC548	4822	130	40938
430	BC548	4822	130	40938
431	BC558	4822	130	40941
432	BC558	4822	130	40941
433	BC558	4822	130	40941
434	BC558	4822	130	40941
435	BC547	5322	130	44257
436	BC547	5322	130	44257
437	BC548B	4822	130	40937
438	BC548B	4822	130	40937
439	BC548	4822	130	40938
440	BC548	4822	130	40938
441	BC558	4822	130	40941
442	BC558	4822	130	40941
443a-b	BD137/BD138	4822	130	40704
444a-b	BD137/BD138	4822	130	40704
445a-b	BD203/BD204	5322	130	30414
446a-b	BD203/BD204	5322	130	30414

-R-				
695	Metal film 23.7kΩ±1%	5322	116	54646
696	Metal film 23.7kΩ±1%	5322	116	54646
699	Metal film 100kΩ±1%	5322	116	54696
700	Metal film 100kΩ±1%	5322	116	54696
707	Metal film 1 kΩ ± 1 %	5322	116	54549
708	Metal film 1 kΩ ± 1 %	5322	116	54549
711	Metal film 3.01kΩ±1%	5322	116	50524
712	Metal film 3.01kΩ±1%	5322	116	50524
715	Safety 5.6 Ω	4822	111	30435
716	Safety 5.6 Ω	4822	111	30435
771	Safety 330 Ω	4822	111	30458
772	Safety 330 Ω	4822	111	30458
753	Wire 2.2Ω,5 W ± 10 %	4822	113	80196
754	Wire 2.2Ω,5 W ± 10 %	4822	113	80196
755	Wire 2.2Ω,5 W ± 10 %	4822	113	80196
756	Wire 2.2Ω,5 W ± 10 %	4822	113	80196
749	3.9 Ω, 1/4 W ± 5 %	4822	110	53043
750	3.9 Ω, 1/4 W ± 5 %	4822	110	53043
719	Trimmer 2.2 kΩ	4822	100	10029
720	Trimmer 2.2 kΩ	4822	100	10029
768	Trimmer 4.7 kΩ	4822	100	10036
769	Trimmer 10 kΩ	4822	100	10035
770	Trimmer 10 kΩ	4822	100	10035
408	Volume 2x220 kΩ	4822	102	30222
409	Bass 2x50 kΩ	4822	105	10043
410	Treble 2x50 kΩ	4822	105	10043
411	Balance 2x20 kΩ	4822	105	10044

-D-				
450	BY164	5322	130	30414
451	BY164	5322	130	30414
452	BY164	5322	130	30414
453	BY164	5322	130	30414
454	OA95	5322	130	30191
455	OA95	5322	130	30191
456	BA315	4822	130	30843
457	BA315	4822	130	30843
458	BA315	4822	130	30843
459	BA315	4822	130	30843
460	BAW62	5322	130	30613
461	BAW62	5322	130	30613
462	BAW62	5322	130	30613
463	BAW62	5322	130	30613
464	BY206	4822	130	30839
465	BY206	4822	130	30839
466	BY206	4822	130	30839
467	BY206	4822	130	30839
468	BZY79/C5V6	5322	130	30759

-Miscellaneous-				
S405	Mains transformer	4822	146	20514
S471		4822	157	50718
S472		4822	157	50718
IND401	Indicator left	4822	347	10138
IND402	Indicator right	4822	347	10139
U412	MD preamplifier	4822	214	50127
LA416	6 V - 100 mA	4822	134	40326
LA417	6 V - 100 mA	4822	134	40326
LA418	6 V - 100 mA	4822	134	40326
LA419	6.3 V - 44 mA	4822	134	40331
VL447	2 A	4822	253	30025
VL448	2 A	4822	253	30025
VL449	4 A	4822	253	30028

-C-				
491	5600 pF ± 5 %	4822	121	50543
492	5600 pF ± 5 %	4822	121	50543
499	560 pF ± 2 %	4822	122	30126
500	560 pF ± 2 %	4822	122	30126
550	2350 μF - 63 V	4822	124	70198
539	3300 μF - 40 V	5322	124	74036
540	3300 μF - 40 V	5322	124	74036

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

D

Die Sicherheitsvorschriften erfordern, dass das Gerät sich nach der Reparatur in seinem originalen Zustand befindet und dass die benutzten Einzelteile den aufgeführten Teilen identisch sind.

SF

Korjattaessa laitetta on turvallisuussyistä ehdottomasti eneteltävä oikein ja käytettävä tehtaan määräämiä alkuperäisvaraosia.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

S

Säkerhetsbestämmelserna kräver att varje reparation skall utföras korrekt med hänsyn till ursprunglig placering av komponenter, ledningar etc. och med användning af föreskrivna reservdelar.

DK

Myndighedernes sikkerheds- og radiostøjbestemmelser kræver, at enhver reparation skal udføres korrekt m.h.t. overholdelse af originalplacering og montering af komponenter, ledningsbundter, etc., og ved anvendelse af de foreskrevne reservedele.

N

Sikkerhetsbestemmelser kreves at apparatet blir gjenopprettet til original utførelse og at deler som er identiske med de som er spesifisert, blir benyttet.

# Service mededeling

PHILIPS NEDERLAND B.V. - EINDHOVEN  
TECHNISCHE SERVICE

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Ret.	R 355	22RH550 Type 22RH551	22RH651	Datum	oktober 1976
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## 22 RH 550

- Vanaf stempeling PLO1 zijn de gelijkrichtdioden 4xBY164 vervangen door 2xBY225, bestelnummer BY225 is 4822 130 30917.
- Weerstand R771 is 270 ohm inplaats van 330 ohm.
- De veiligheid tussen de lampjes en de aansluiting op de transformator is 1A-traag, bestelnummer 4822 253 30021.
- De elco C550, 2x2350 uF - 63 V, is vervangen door een elco van 4700 uF - 63 V. Deze laatste wordt onder hetzelfde bestelnummer geleverd als in de documentatie vermeld staat: 4822 124 70198.

## 22 RH 551

- Het bestelnummer van de transformator staat onjuist in de documentatie. Het correcte nummer is 4822 145 30159.
- Met ingang van stempeling PLO1 is weerstand R1003 (270 ohm) vervangen door een veiligheidsweerstand van 220 ohm - 4822 111 30008.

## 22 RH 651

- Condensator C552 is vervangen door een elco van 10 uF - 25 V.
  - Weerstand R841 was 15 kohm, is gewijzigd in 13 kohm.
- 



**PHILIPS**