MIXING CONSOLES

MIC-AMP
Users manual

D&R Electronica Weesp b.v.
Rijnkade 15B
1382 GS Weesp
The Netherlands
Phone: ++31 (294) 418 014
Fax: ++31 (294) 416 987

We thank you for choosing this new D&R product and would like to invite you to read this users manual carefully before you start using this product.

PRECAUTIONS:

The product you have just unpacked is manufactured with safety in mind and is double checked in the test department for reliability in its high-voltage section.

The MIC-AMP operates on 115 volt or 230 VAC, 50/60 Hz. In some products there is a voltage-selector built in on the rear panel that indicates how the unit was set at the factory
If the voltage-selector does not indicate the voltage that your country is using, remove the line cord from the mains and place the voltage-selector to its proper position. If no voltage selector is mounted inside your Mic-amp, the factory has already set the mic-amp for the right voltage used in your country.

WARNING

Never change the position of the voltage-selector while the unit is still connected to the mains! Should any solid object or liquid fall into the cabinet, turn off the unit immediately and have it checked by qualified personnel before operating it any further.

When the unit is not to be used for a long period, turn the power off to conserve energy and to extend the useful product life of your unit.

RACK MOUNTING

You can mount the MIC-AMP (height is 1HE, width is 9.1/2") in a 19" rack by using two MIC-AMP modules or using one MlC-AMP and one blind panel.

- Allow adequate air circulation to prevent internal heat build-up.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains) that may block ventilation.
-Do not install the unit near heat sources such as radiators or power-amplifiers or in a places subject to excessive mechanical vibration.

FUSEHOLDER:

The fuse holder is mounted inside the unit (read product safety. When a fuse is blown, replacing it with a new one may not be sufficient. The actual cause must be detected and solved.
Contact your nearest dealer if the unit can not be repaired by replacing the fuse. Use only the fuses specified.

MIC-AMP

This two channel pre-amp is designed to be the answer for extremely high quality microphone amplification especially on equipment which only are provide with line inputs.
It transforms the balanced microphone-level signal to an unbalanced -10 dBV line-level signal to correspond to the line inputs on other equipment, for example P.C.M.-units and DAT/DCC recorders

SETTING UP PROCEDURE

Connect the microphone to the input of the MIC-AMP and the output of the MIC-AMP to the equipment it should be connected to.

GAIN

When a signal at the input is present the normal led lights regularly. (is green)
Turn the gain clockwise until the clip led lights sporadic.

48 VOLT PHANTOME POWERING

For condenser microphones a 48 Volt phantom is provided per channel.
You will not hear any click while switching. This phantom circuit uses a soft switching arrangement. This means the voltage is built up slowly. It is active after about 8 seconds.
The phantom power does not effect dynamic microphones when the microphone, cables and plugs are wired symmetrical. (balanced).
Be sure, that your microphone wiring is balanced to keep optimum signal to noise ratio.

PHASE

The phase switch reverses the wiring of the microphone input, so it changes the polarity of the connected microphone.
This can be useful when two microphones are out of phase or cancellations are to be heard in the low frequency range.

CONNECTIONS

It is recommended to unplug the MIC-AMP from the mains outlet, before making the following connections.
Reconnect the mains-lead after the connections have been completed and make sure they are secure.

MICROPHONE INPUT

The MIC-AMP has two separate microphone inputs, each on a stereo Jack socket or XLR socket when ordered in that configuration.

WIRING DIAGRAM FOR IN/OUTPUT CONNECTORS

INPUT	jack/XLR	tip/2	= in phase
		ring/3	= out of phase
		sleeve/1	= ground

OUTPUT	jack/XLR	tip/2	= in phase
		ring/3	= out of phase
		sleeve/1	= ground

The MIC-AMP has two separate, low impedance, ground compensated outputs on a nominal operating level of -10 dB and a maximum output level of +22 dBu.

SPECIFICATIONS

Inputs	stereo jack / XLR female	6,25 mm / 3pin XLR female balanced
	impedance	2 kOhm
	max. input level	+ 3 dBu
	CMRR	> 62 dB at 50 Hz
		> 70 dB at 1 kHz
		> 66 dB at 10 kHz
Output	stereo jack / XLR male	6,25 mm / 3 pin XLR male ground compensated
	impedance	100 Ohm
	nom. level	- 7.8 dBu (-10 dBV)
	max. level	+ 23 dBu

OVERALL

THD at	O dB /	100 Hz	0,012%
	O dB /	1 kHz	below noise level
	O dB /	10 kHz	below noise level

Gain min.	+ 20 dB
max.	+ 60 dB

Gain control (at front	40 dB
S/N-ratio (gain max.)	- 129,0 dBr (A-weighted)
Frequency-response	- 3 dB at 2 Hz, - 3 dB at 100 kHz

Phantom active after:	8 sec. Vph > 42 V (phantom led is red)

Normal led on at	- 7,8 dBm (- 10 dBV) (nom. level)

Clip led on at	+18 dBu

Power requirements	115volt - 230 volt AC 50/60 Hz
Power consumption	3VA

Fuse	163 mA slow
Storage temperature	- 10C to + 65C
Operating temperature	+ 3C to + 40C
Dimensions	Approx. 201 x 44 x 175 mm (w/h/d) (excl. controls)
	201 x 44 x 198 mm (w/h/d) (incl. controls)
	9,5" x 1HE (w/h)
Weight	Approx. 1,7 kg

CLEANING

Clean the cabinet, panel and controls with a dry soft cloth. Do not use a moistened cloth or any type of solvent, such as alcohol or any other spirit, which might damage the finish.

CAUTION:

Never open your equipment yourself, there are no users serviceable parts inside, therefore we strongly advice not to open the unit yourself.
- Opening a unit is only allowed to trained and qualified service engineers, who are fully aware of the fact that it can be dangerous to service a mains powered unit.
- Always earth the unit.
- Only make use of the product in a way as is described in the manufacturers brochures and manuals, never use it for other purposes than intended by the manufacturer.
- Never use this equipment in an environment with a high humidity and never expose it to water.
- Do not use this equipment in rain/snow or equivalent type of weather.
- Check your mains cord regularly and see if it is in a safe condition with a properly connected mains plug on one side and securely tightened in the equipment on the other side.
- Return your product yearly to your dealer for a safety checkup.
- The hazard of an electrical shock can be avoided by carefully following the rules mentioned above.

PLEASE CAREFULLY READ THE FOLLOWING INFORMATION

Especially in sound equipment on stage the following information is essential to know. An electrical shock is caused by voltage and current, actually it is the current that causes the shock. In practise the higher the voltage the higher the current will be and the higher the shock.
But there is another thing to consider and this is resistance. When the resistance (in ohms) is high between two poles, the current will be low and vica versa. All three of these voltage, current and resistance are important in determining the effect of an electrical shock. However the severity of a shock is primarily determined by the amount of current flowing through a person.

A person can feel a shock because the muscles in a body respond to electrical current and because the heart is a muscle, it can be affected when the current is high enough. Current can also be fatal when it causes the chest muscles to contract.
At what potential is current dangerous. Well the first feeling of a current is a tingle at 0,001 Amp of current. The current between 0,1 and 0,2 Amp is fatal. Imagine that your home fuses of 20 Amp can handle 200 times more current than is necessary to kill.
How does resistance affect the shock a person feels. A typical resistance between one hand to the other in a "dry" condition could be well over 100.000 ohm. If you are playing on stage your body is perspiring profusely and your body resistance is lowered by more than 50%. This is a situation in which current can easily flow. Current will flow when there is a difference in ground potential between equipment on stage and in the P.A.-system. Please do check if there is any potential between the housing of the mikes and the guiter/synth amps, which will be linked by your body on stage. Imagine, a guitar in your hand and your lips close to the mike! A ground potential difference of above 10 Volts is not unusual, in improperly wired buildings it can possibly be as high as 240 Volts. Although removing the ground wire sometimes cures a system hum, it will also create a very

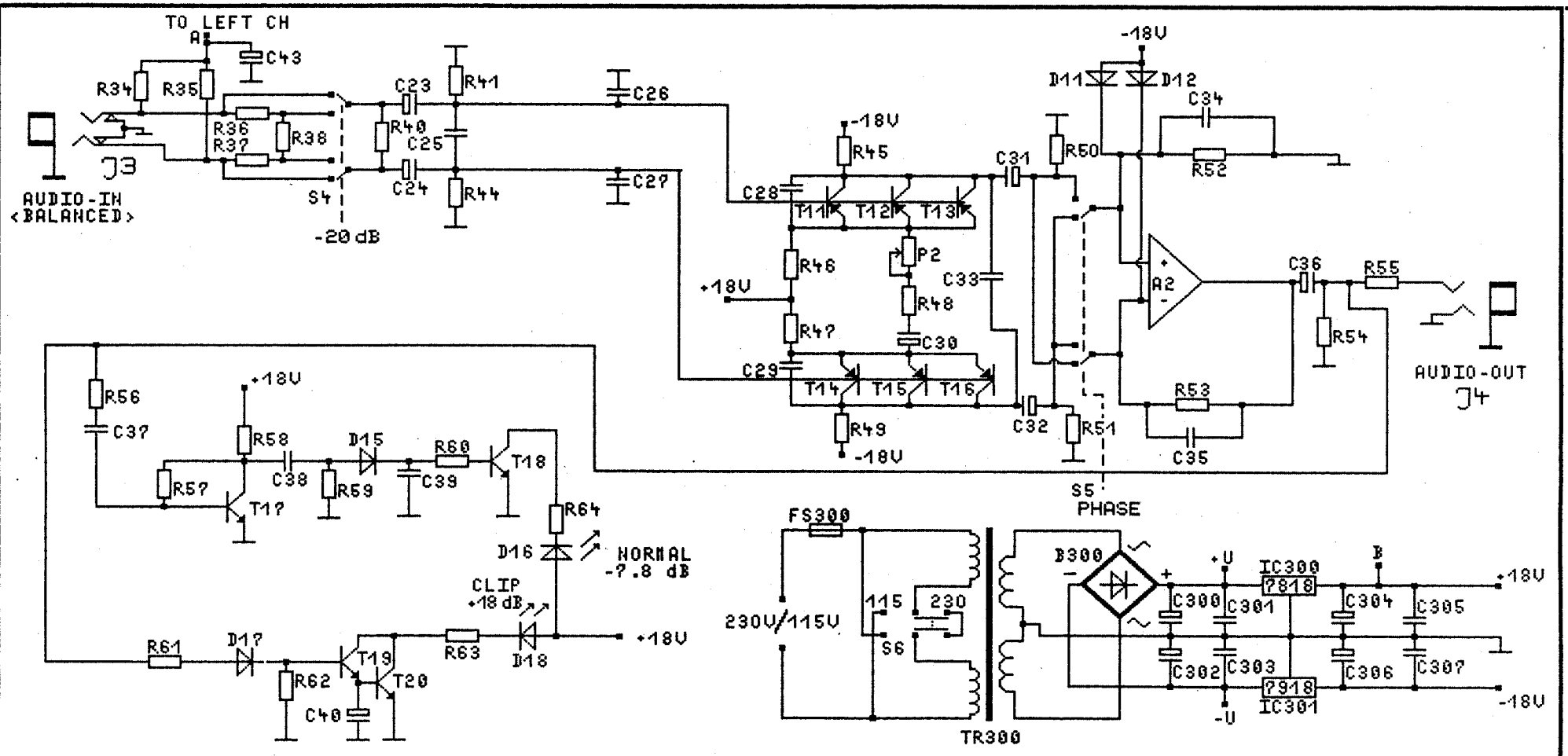
hazardous situation for the performing musician. Always earth all your equipment by the grounding pin in your mains plug or to the metal cabin of your device.
Hum loops should only be cured by proper wiring and isolation input/output transformers.
Replace fuses always with the same type and rating after the equipment has been turned off and unplugged. If the fuse blows again you have an equipment failure, do not use it again and return it to your dealer for repair. And last but not least:

Be careful NOT TO TOUCH a person being shocked, as you, yourself could also be shocked. Once removed from the voltage, have someone send for medical help immediately.

ALWAYS KEEP THE ABOVE MENTIONED INFORMATION IN MIND WHEN USING ELECTRICALLY POWERED EQUIPMENT!

We wish you a creative use of this D&R Mic-amp and are certain that this will enhance your recordings in a positive way.

Please consult your dealer when you have questions or us.



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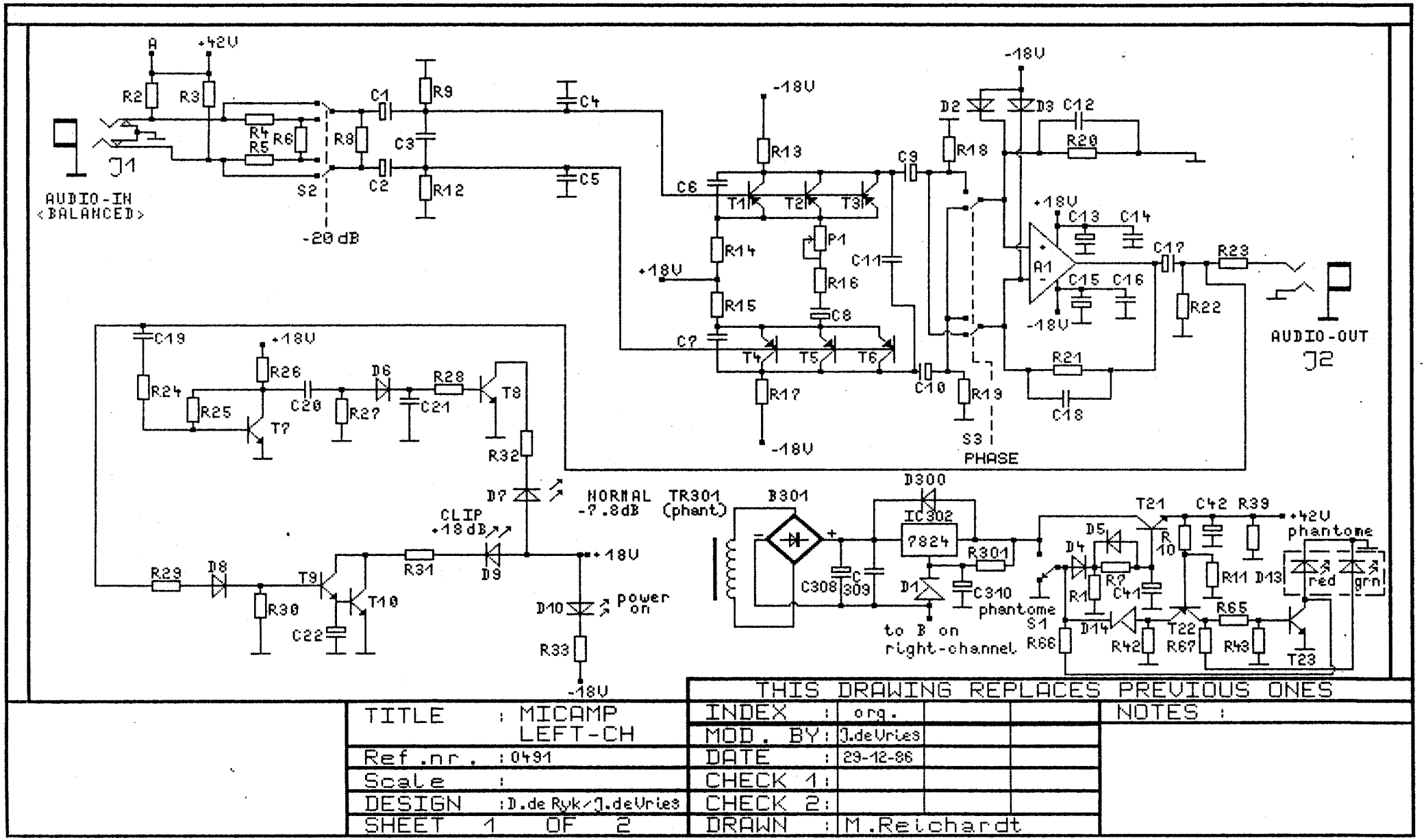

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TITLE : MICAMP LEFT-CH	INDEX :	org.			NOTES :
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SHEET 1 OF 2	CHECK 2:				
	DRAWN :	M.Reichardt			

== ELECTRONICA B.V. ----------

produktie en ontwikkeling van
geluidsmengpanelen en accessoires

Date: 20-01-87 R & D department

Title : MIC-AMP 9.5''

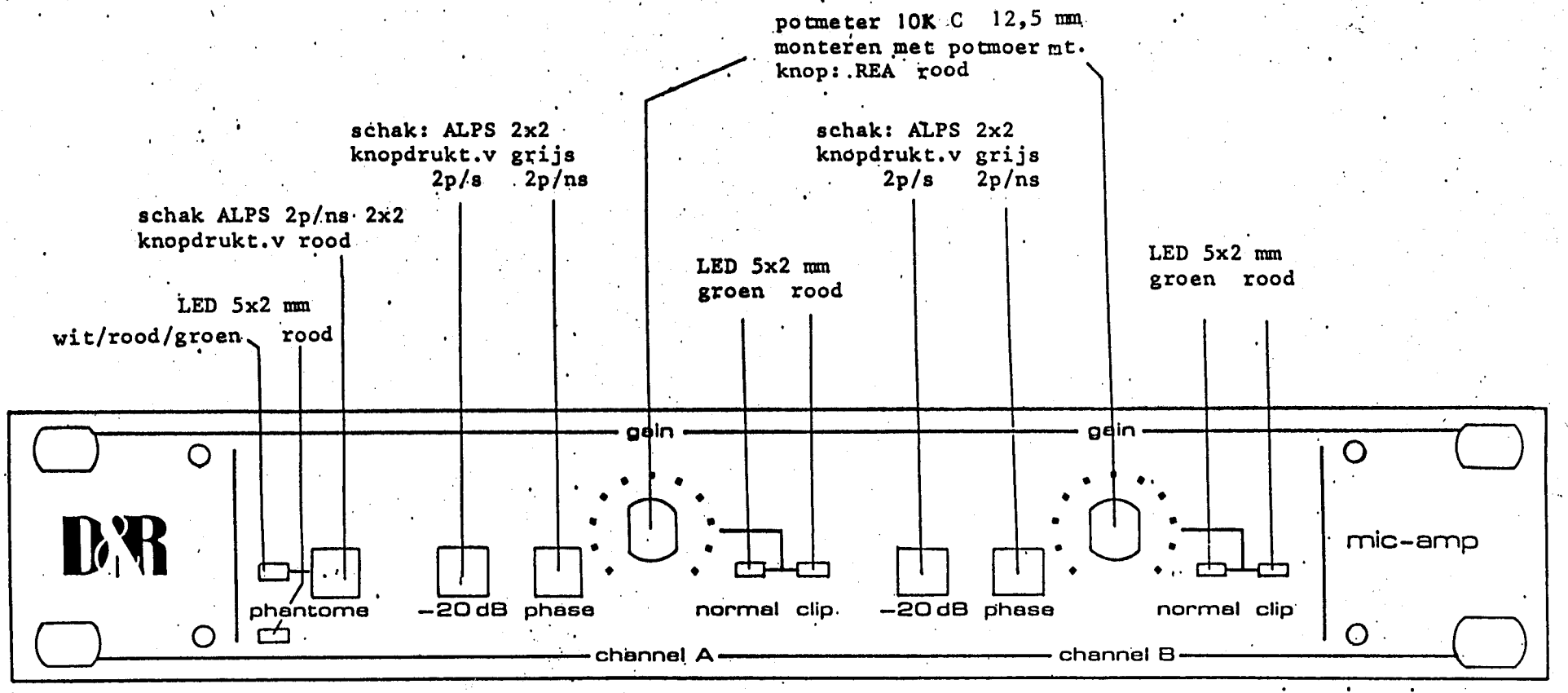
print index: A

Part Nr		Value	Notes	Art Nr
Phant	R1	10k	5%	0741
L chan	R2	6k81	1%	0846
	R3	6k81	1%	0846
	R4	1k07	1%	0829
	R5	1k07	1%	0829
	R6	205E	1%	0812
Phant	R7	10k	5%	0741
L chan	R8	10k0	1%	0848
	R9	4k75	1%	0844
Phant	R10	15k	5%	0743
	R11	330k	5%	0759
L chan	R12	4k75	1%	0844
	R13	4k75	1%	0844
	R14	8k25	1%	0520
	R15	8k25	1%	0520
	R16	22E	5%	0709
	R17	4k75	1%	0844
	R18	100k	1%	0871
	R19	100k	1%	0871
	R20	27k4	1%	0860
	R21	27k4	1%	0860
	R22	47k	5%	0749
	R23	100E	5%	0717
L. leds	R24	33k	5%	0747
	R25	150k	5%	0755
	R26	3k3	5%	0735
	R27	47k	5%	0749
	R28	15k	5%	0743
	R29	22k	5%	0745
	R30	8k2	5%	0740
	R31	1k5	5%	0731
	R32	1k0	5%	0731
	R33	3k3	5% 0.5W	0065
R chan	R34	6k81	1%	0846
	R35	6k81	1%	0846
	R36	1k07	1%	0829
	R37	1k07	1%	0829
	R38	205E	1%	0812
Phant.	R39	10k	5%	0741
R chan	R40	10k0	1%	0848
	R41	4k75	1%	0844
Phant.	R42	27k	5%	0746
	R43	2k7	5%	0734
R chan	R44	4k75	1%	0844
	R45	4k75	1%	0844
	R46	8k25	1%	0520
	R47	8k25	1%	0520
	R48	22E	5%	0709

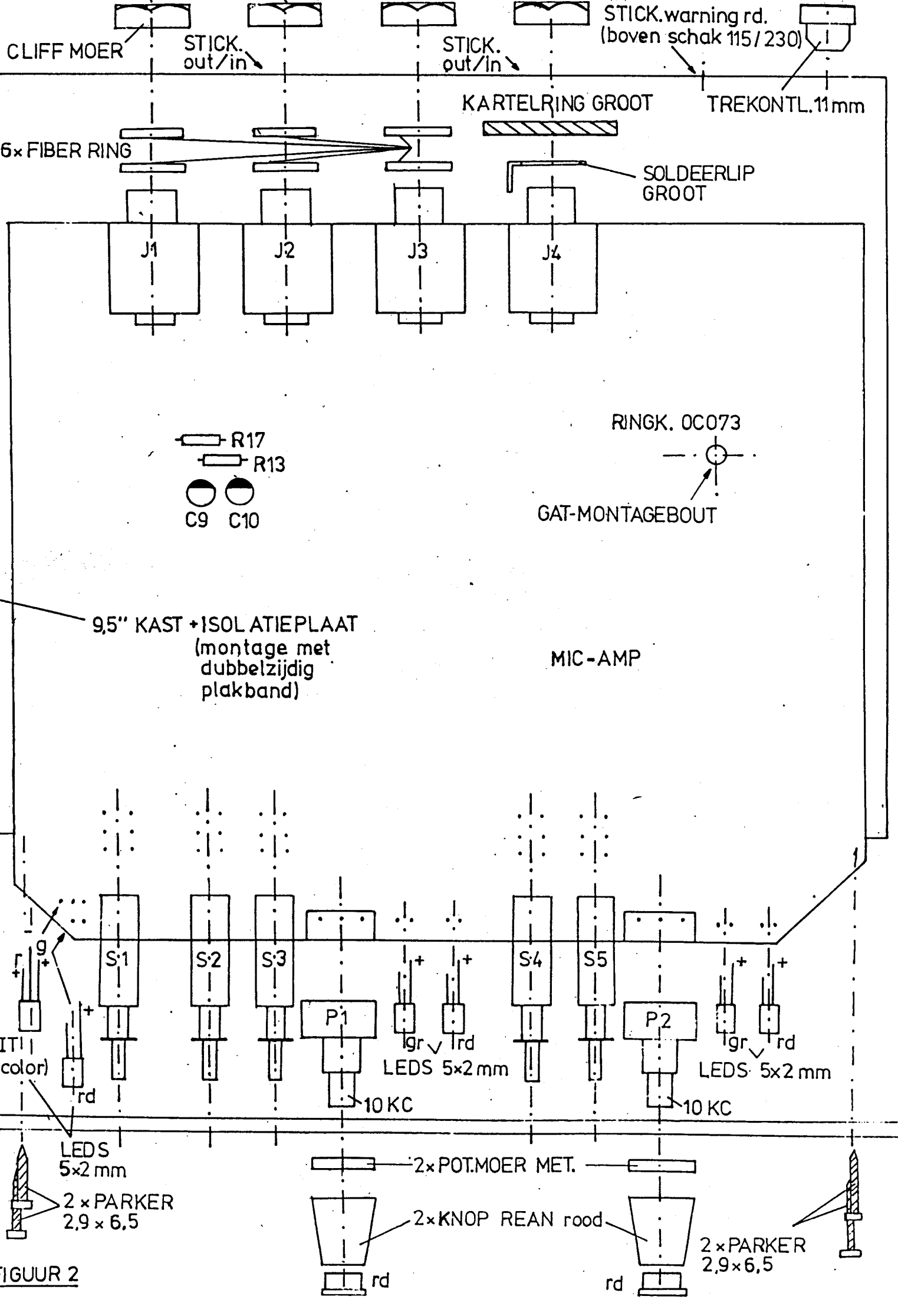
	R49	4k75	1%	0844
	R50	100k	1%	0871
	R51	100k	1%	0871
	R52	27k4	1%	0860
	R53	27k4	1%	0860
	R54	47k	5%	0749
	R55	100E	5%	0717
	R56	33k	5%	0747
	R57	150k	5%	0755
	R58	3k3	5%	0735
	R59	47k	5%	0749
	R60	15k	5%	0743
	R61	22k	5%	0745
	R62	8k2	5%	0740
	R63	1k5	5%	0731
	R64	1k5	5%	0731
Phant.	R65	4k7	5%	0737
	R66	3k9	5% 0.5W	0087
	R67	3k3	5%	0735
	R301	3k9	5%	0736
L-chan.	C1	47u/63V	elco	0289
	C2	47u/63V	elco	0289
	C3	270p	ker	0230
	C4	1000p	ker	0236
	C5	1000p	ker	0236
	C6	----	----	----
	C7	----	----	----
	C8	220u/6.3V	elco	0301
	C9	47u/25V	elco	0287
	C10	47u/25V	elco	0287
	C11	---	----	----
	C12	10p	ker	0213
	C13	47u/25V	elco	0287
	C14	0.1u/63V	ker	0241
	C15	47u/25V	elco	0287
	C16	0.1u/63V	ker	0241
	C17	47u/25V	elco	0287
	C18	10p	ker	0213
L-leds	C19	0.68u	poly	0267
	C20	0.68u	poly	0267
	C21	0.1u	poly	0261
	C22	47u/25V	elco	0287
R-chan.	C23	47u/63V	elco	0289
	C24	47u/63V	elco	0289
	C25	270p	ker	0230
	C26	1000p	ker	0236
	C27	1000p	ker	0236
	C28	----	----	----
	C29	----	----	----
	C30	220u/6.3V	elco	0301
	C31	47u/25V	elco	0287
	C32	47u/25V	elco	0287
	C33	----	----	----
	C34	10p	ker	0213
	C35	10p	ker	0213
	C36	47u/25V	elco	0287
	C37	0.68u	poly	0267
	C38	0.68u	poly	0267
	C39	0.1u	poly	0261
	C40	47u/25V	elco	0287
	C41	220u/63V	elco	0299
	C42	47u/63V	elco	0289
	C43	47u/63V	elco	0289
	C300	1000u/40V	elco	0297
	C301	0.1u/63V	ker	0241

	C302	1000u/40V	elco	0297
	C303	0.1u/63V	ker	0241
	C304	47u/25V	elco	0287
	C305	0.1u/63V	ker	0241
	C306	47u/25V	elco	0287
	C307	0.1u/63V	ker	0241
Phant.	C308	1000u/40V	elco	0297
	C309	0.1u/63V	ker	0241
	C310	47u/63V	elco	0289
L-chan.	T1	BC560b	PNP	0327
	T2	BC560b	PNP	0327
	T3	BC560b	PNP	0327
	T4	BC560b	PNP	0327
	T5	BC560b	PNP	0327
	T6	BC560b	PNP	0327
L-leds	T7	BC546b	NPN	0328
	T8	BC517b	NPN	0326
	T9	BC517b	NPN	0326
	T10	BC546b	NPN	0328
R-chan.	T11	BC560b	PNP	0327
	T12	BC560b	PNP	0327
	T13	BC560b	PNP	0327
	T14	BC560b	PNP	0327
	T15	BC560b	PNP	0327
	T16	BC560b	PNP	0327
R-leds	T17	BC546b	NPN	0328
	T18	BC517b	NPN	0326
	T19	BC517b	NPN	0326
	T20	BC546b	NPN	0328
Phant.	T21	BC546b	NPN	0328
	T22	BC327/25V	PNP	0333
	T23	BC546b	NPN	0328
	D1	5V6	zener	0351
	D2	1n4148	sgn	0342
	D3	1n4148	sgn	0342
Phant.	D4	1n4148	sgn	0342
	D5	1n4148	sgn	0342
L-leds	D6	1n4148	sgn	0342
	D7	LED normal	5x2 grn	0389
	D8	1n4148	sgn	0342
	D9	LED clip	5x2 red	0390
	D10	LED power on	5x2 red	0390
R-chan.	D11	1n4148	sgn	0342
	D12	1n4148	sgn	0342
Phant.	D13	LED Phantome	bicolor	0419
	D14	5V6	zener	0351
R-leds	D15	1n4148	sgn	0342
	D16	LED normal	5x2 grn	0389
	D17	1n4148	sgn	0342
	D18	LED clip	5x2 red	0390
Phant.	D300	1n4003	rct	0343
	A1+A2	NE5532	lownoise	0307
	IC300	7818	pos.reg.	0322
	IC301	7918	neg.reg.	0323
	IC302	7824	pos.reg.	0324
	B300	B80C1000	brugcel	0345
	B301	B80C1000	brugcel	0345
	TR300	2x18V/1x40mA	toroidal	0102
	FS300	fuse 160mA slow & fuse holder		0693/0675
L-in	J1	CLIFF	break	0432
L-out	J2	CLIFF	break	0432
R-in	J3	CLIFF	break	0432
R-out	J4	CLIFF	break	0432

L-chan.	P1	10 KC	12.5mm	0899
R-chan.	P2	10 KC	12.5mm	0899
Phant.	S1	ALPS	2p/ms	0400
L-20dB	S2	ALPS	2p/s	0403
phase	S3	ALPS	2p/ms	0400
R-20dB	S4	ALPS	2p/s	0403
phase	S5	ALPS	2p/ms	0400
power	S	115V/230V		0083


potmeter 10K C 12,5 mm
monteren met potmoer mt.
knop: .REA rood
schak: ALPS 2x2
knopdrukt.v grijs
2p/s 2p/ns
schak ALPS 2p/ns 2x2
knopdrukt.v rood
LED 5x2 mm
wit/rood/groen rood
LED 5x2 mm
groen rood
schak: ALPS 2x2
knopdrukt.v grijs
2p/s 2p/ns
LED 5x2 mm
groen rood
gain
gain
D&R
mic-amp
phantome
-20 dB
phase
normal
clip
-20 dB
phase
normal
clip
channel A
channel B

FIGUUR 1


CLIFF MOER
STICK. out/in
STICK. out/in
STICK.warning rd. (boven schak 115/230)
KARTELRING GROOT
TREKONTL. 11 mm
6× FIBER RING
SOLDEERLIP GROOT
J1
J2
J3
J4
R17
R13
C9
C10
RINGK. 0C073
GAT-MONTAGEBOUT
9,5" KAST + ISOLATIEPLAAT (montage met dubbelzijdig plakband)
MIC-AMP
S1
S2
S3
P1
S4
S5
P2
gr
rd
LEDS 5×2 mm
10 KC
LEDS 5×2 mm
2× POT.MOER MET.
2× KNOP REAN rood
2 × PARKER 2,9 × 6,5
2 × PARKER 2,9 × 6,5

FIGUUR 2

1) De kast.

a. Kastaarding
Verwijder in de kast de verf rond het gat van de OUTPUT-jack, dit is de meest rechtse jackplug gezien van binnenuit de kast.

b. Isolatieplaatje
Alvorens de print in het kastje wordt geplaatst moet eerst nog een 9,5 " isolatieplaatje, m.b.v. dubbelzijdig plakband, op de bodem van het kastje worden geplakt.(figuur 2)

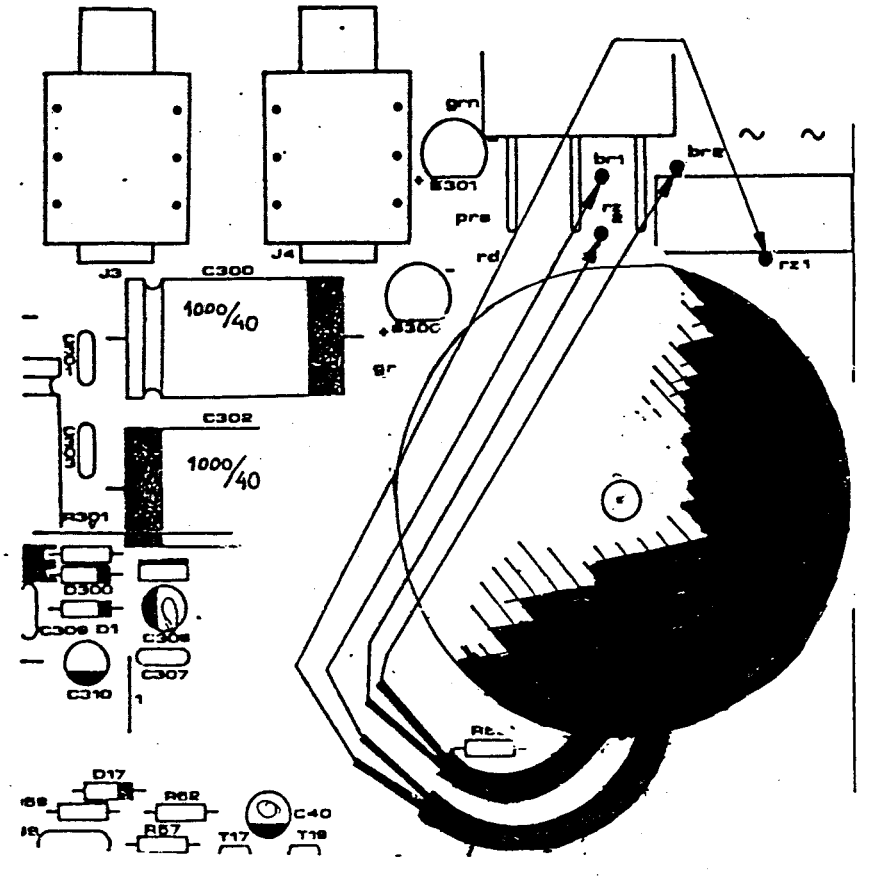
c. Stickers
Vergeet niet de stickers aan de achterzijde van de kast te plakken. (zie hiervoor figuur 2)

2) De trafo

Van de trafo draden als volgt op lengte brengen (gemeten vanaf de trafo):

Primair: zwart, roze (br1,rz1) en bruin, wit (br2,rz2): 15 cm.
Secundair: Paars-Rood-Grijs: 15 cm.
Groen-Geel-Blauw: 15 cm.

De draden afstrippen, vertinnen en vervolgens twisten en vastsolderen aan de printzijden.

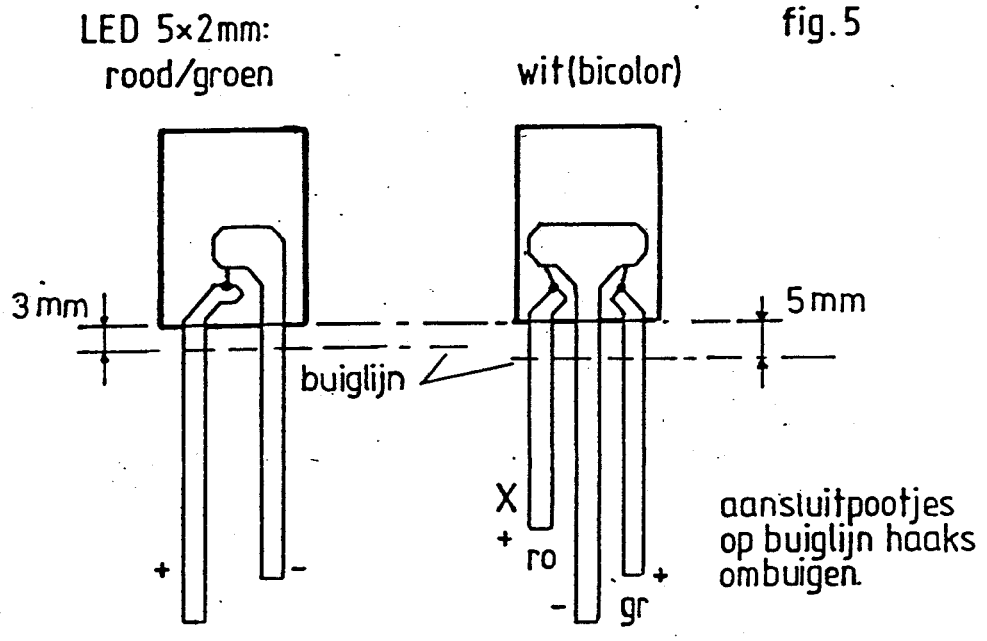


3) Het front

Het front wordt eerst los tegen de print geplaatst, de potmeters door de hiervoor bestemde openingen duwen.

4) Led's

Behalve LED D10, worden alle LED's aan de componentzijde gemonteerd. (zie figuur 2)
LED D10 wordt, na te zijn omgebogen, dus aan de koperzijde gemonteerd. (zie ook figuur 2)
Speciale aandacht verdient LED D13 welke van het "bicolor" type is en 3 aansluitpennen heeft.(zie figuur 5)



Buig de pootjes van de LED's om op een afstand van 3 en 5 mm van het ledje.(zie ook bovenstaande figuur 5)
Plaats de voorkant van de LED gelijk aan het front.

5) Het front wordt d.m.v. de potmoeren vastgezet aan de print.
Vervolgens wordt de LED vastgesoldeerd en eventueel nagericht.
Let goed op de polariteit en de kleur van de LED's..
De meest linkse LED's hebben de neiging naar binnen te trekken als de moeren van de jacks en potmeters worden vastgedraaid, maak de buiglijn afstand dus iets groter.

6) De kast (afmontage)

- De soldeerlip wordt om de print heen gebogen en vastgesoldeerd op de AUDIO-aarde van de print.

6) vervolg

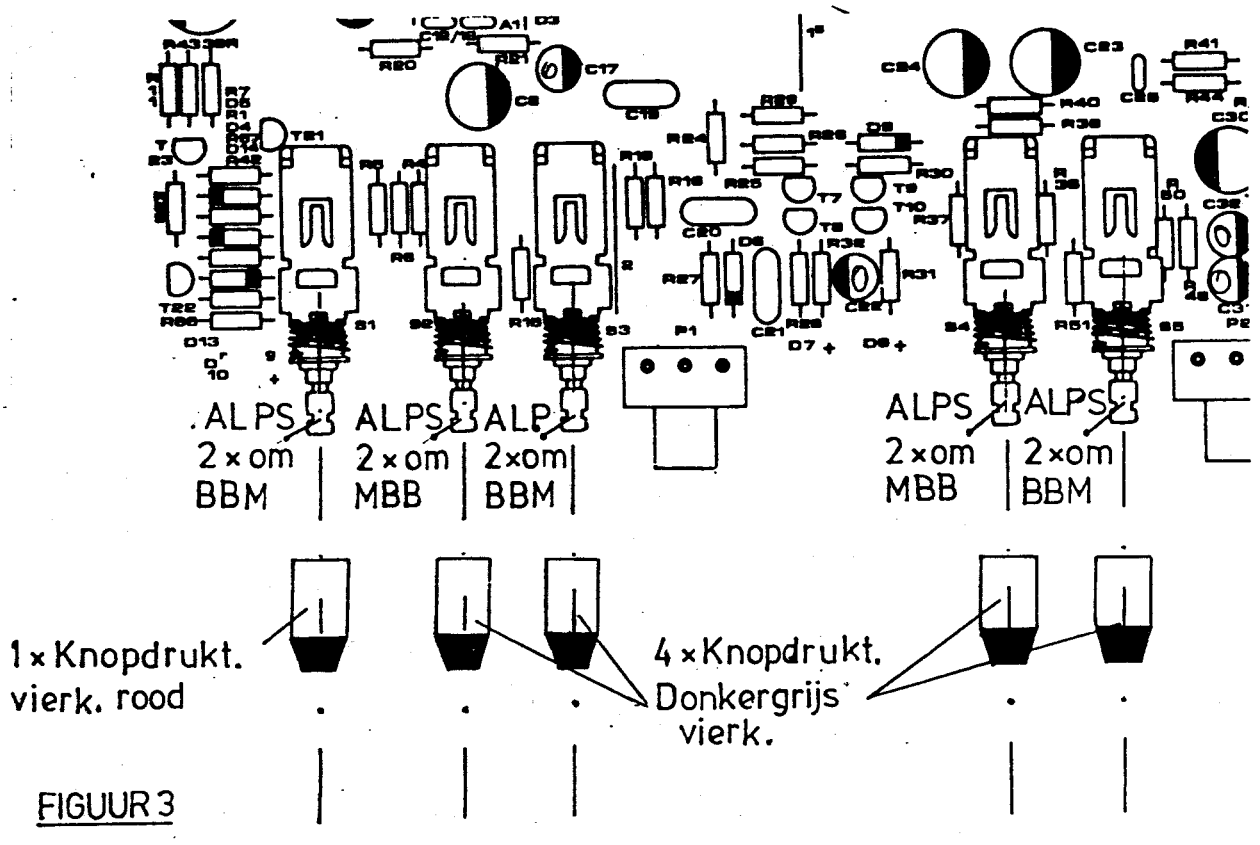
- De trafo wordt, met de montagebout naar beneden gericht gemonteerd. (Bout M4x40) aan de onderkant gebruikt men drie kartelringen
  Nu de trafo zo draaien dat de gele tules zich bovenaan bevinden.

  De bout, waarmee de trafo vast komt te zitten, niet te vast aandraaien omdat anders de print kan beschadigen. (zie figuur)
- Het netsnoer wordt door de 220 V trekontlasting gehaald en aan de componentzijde op de print gesoldeerd (bij "~" -teken).
- Vervolgens wordt een 12 mm kartelring over de OUTPUT-jack geschoven. De overige jacks worden ieder voorzien van twee fiber ringen.
- Het front wordt met 4 parkers (2,9 x 6,5) vast aan de kast geschroefd.

7) Potmeterknoppen en druktoetsen

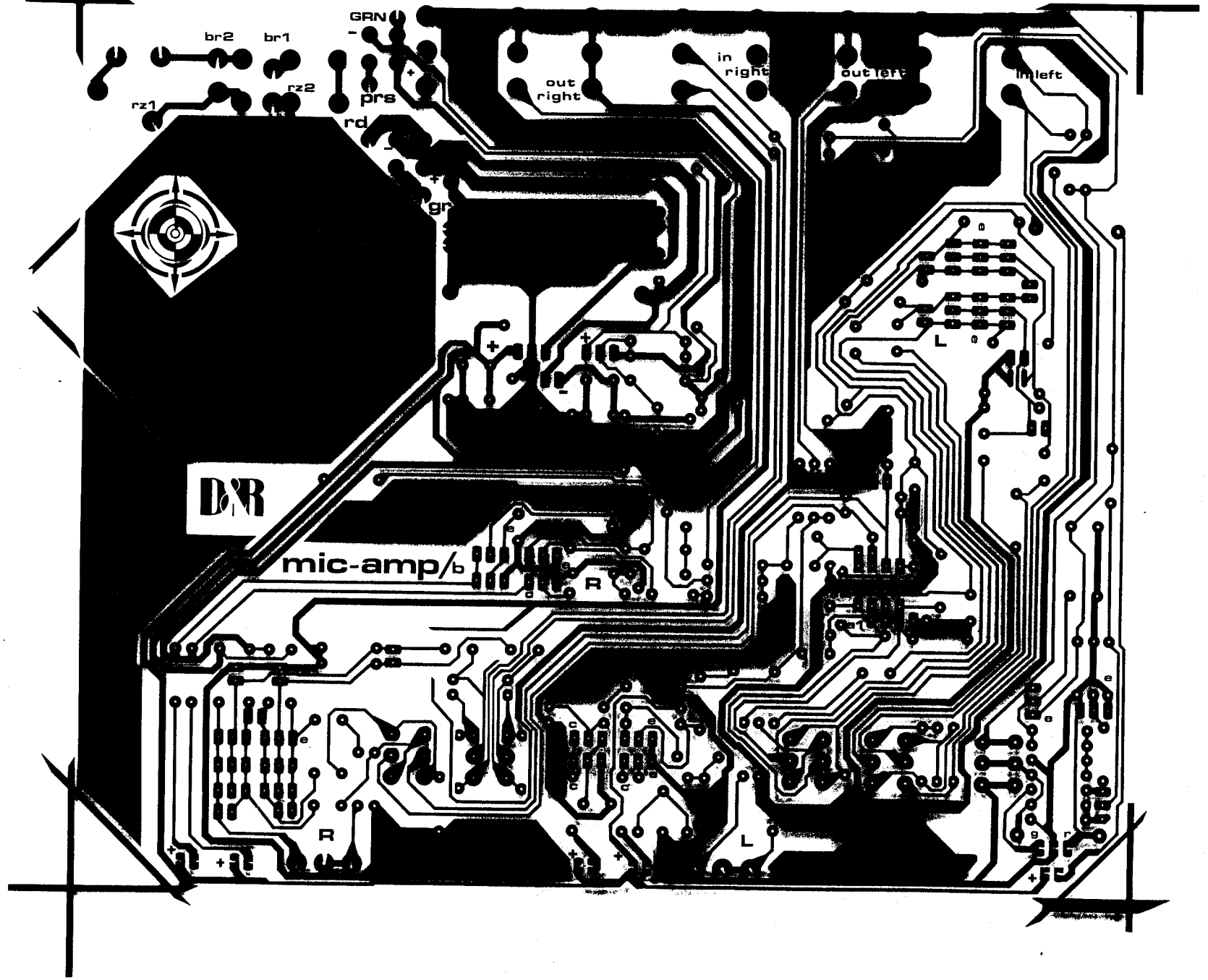
De potmeterknoppen worden volgens figuur 2 op de potmeters gedrukt.

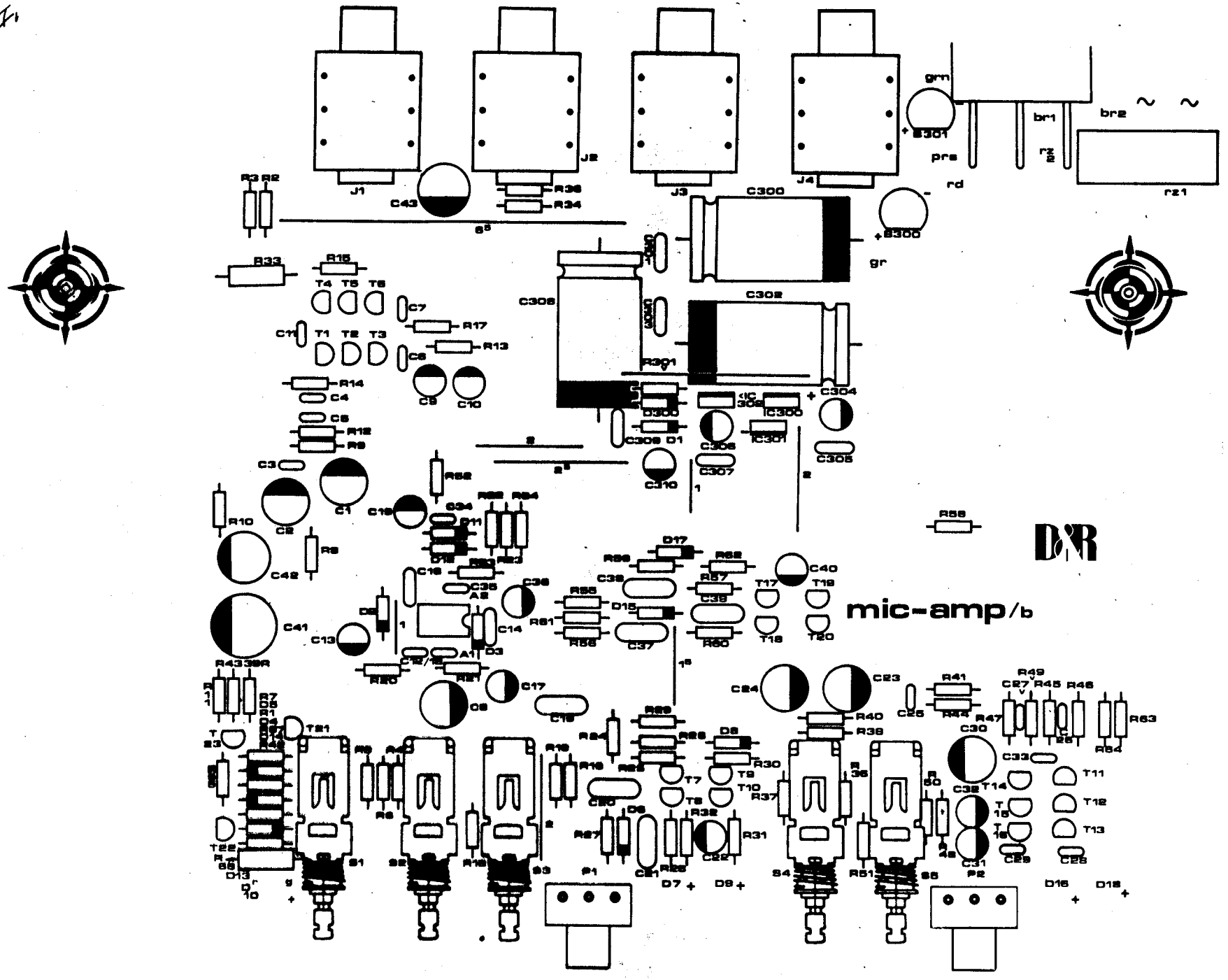
Figuur 3 laat zien welke drukknoppen op de ALPS-schakelaars komen.



FIGUUR 3

Let goed op de juiste kleuren.
De knoppen worden geplaatst voordat de print in het kastje wordt geschoven.


GRN
br2
br1
rz2
rz1
prs
rd
out
right
in
right
out left
in left
D&R
mic-amp/b
R
L
R
L


J1
J2
J3
J4
grn
+8301
pre
rd
br1
br2
rz2
rz1
C43
R3 R2
R36
R34
C300
+8300
gr
R33
R15
T4 T5 T6
C7
R17
C11
T1 T2 T3
C8
R13
R14
C4
C9
C10
C308
C302
R301
C304
IC 302
IC300
IC301
D300
C309 D1
C306
C307
C305
C310
C5
R12
R9
C3
C1
C2
R10
C42
R8
C19
R52
R53 R54
C34
C11
C18
C16
C35
C36
C41
C13
C14
R51
D3
A1
C12/15
R50
R21
C17
C18
C8
R43 39R
R7
D6
R1
D4
R47
T21
T23
T22
R44
R55
D13
S1
S2
S3
P1
R6
R16
R24
R29
R28
D8
R30
T7
T9
T10
R37
T8
R32
R31
C21
R27
R26
D7
D9
C22
C24
C23
R40
R38
C26
R41
R44
R49
C27
R45
R46
R47
C28
R63
R64
C30
C33
T11
T12
T13
C32
T14
T15
T16
C31
C29
C25
P2
S4
R51
S5
D16
D15
D17
R56
R62
C40
T17
T19
C39
R57
C38
R55
D15
C37
R60
T18
T20
R58
D&R
mic-amp/b

MIC AMP.
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1. Kastje uitpakken.
   Kastje aan de binnenzijde het 4e gat van links verf vrij maken.
   Isolatie plaat op de bodem plakken.
   Sticker aan de achterzije van kastje plakken.

2. De trafo.
   De draden van de trafo als volgt op lengte brengen.(gementen vanaf de trafo.)
   Primair: zwart roze (br1,rz1) en bruin, wit (br2,rz2) :15 cm
   Secundair: paars 14 cm (groen)
   geel-blauw 11 cm (rood-grijs)

   Draden afstrippen, vertinnen, twisten en monteren aan printzijde.

3. POTmeters op print monteren. zie tekening 1
   Schakelaars op print monteren.

4. Het front voor de print platsen en POTmeters door het front steken. Het front nog niet vast zetten.

5. LED´s monteren. Behalve LED D1Ø, worden alle LED´s aan de componentzijde gemonteerd.
   LED D1Ø wordt, na het buigen aan de soldeerzijde gemonteerd.
   LETOP LED D13 is een bicolor LED, deze heeft twee aansluitpennen.
   De LED´s nog niet vast solderen wel al in de juiste gaten in het front duwen.

6. Het front vast zetten met POTmeter moeren. De LED´s vast solderen en narichten.

7. Soldeerlip om 4e JACK van links solderen. Lipje ombuigen en vast solderen aan massa vlak van de print.

8. Trafo met montagebout naar boven gericht monteren. Zowel aan de boven als onderkant een kartel ring gebruiken. De trafo zo draaien zodat het gele tule zich onderaan bevind.
   Bout waar de trafo mee vast zit niet te strak aan draaien.

9. Netsnoer door kastje halen en monteren.

1Ø. Kartelring om jack met soldeerlip om de andere jack´s twee fiberringen.

11. Jack´s door gaten van de kast halen en op aan de achterkant Jackmoeren en trekontlasting aan brengen.

12. Het front aan het kastje vast zetten.