TELEPHONE HYBRID manual

The D&R telephone hybrid is intended to be used to create an easy connection between the telephone line and studio equipment.
Connection has to be made between telephone and the telephone line by way of the hybrid.
Connect the two wires of the telephone line to the tip and earth of the line input and connect the telephone itself to the phone output on the tip and earth only. Now the hybrid is interfaced (fully balanced) between your telephone and its connection to the outside world.
The hybrid is now capable of splitting the send and return signals.
Connect the hybrid balanced audio input to a (preferable) balanced output of around +4dBu. This output has to be the mix of all signals except the signal coming from the hybrid itself to avoid feedback
An aux output will do, or in broadcast mixers a modified cleanfeed is the best.

SETTING UP PROCEDURE

Push the "to caller" switch and leave the "connect" switch in the up position
Now dial the caller to whom you want to talk.
If this connection is made you connect the caller to the mixing console by pushing the connect switch.
Now listen by means of a pfl switch to the caller and adjust while talking the C and R balance so that the outgoing signal (your talking) is best damped.
Practically for a start is to put the C balance on number 7 and the R balance on 5.
Carefully adjusting afterwards can be realised by slowly adjusting the R balance for optimum damping.
This can be left in this way for most of your calls, because only the line to you own telephone station has to be balanced once.
The damping will be around 22 to 26 dB.

The function of the "connect" switch is to connect the hybrid to the telephone line instead of the phone itself (which is now switched off).
The led indicates that a connection has been made.
The function "to caller" is there to disconnect the outgoing signal to the caller for private discussions.

IN BALANCED USE

AUDIO IN

ground

cold

hot

AUDIO OUT

ground

cold

hot

IN UNBALANCED USE

AUDIO IN

ground

ground

hot

AUDIO OUT

ground

ground

hot

TELEPHONE LINE

LINE

B

n.c.

A

PHONE

b

n.c.

a
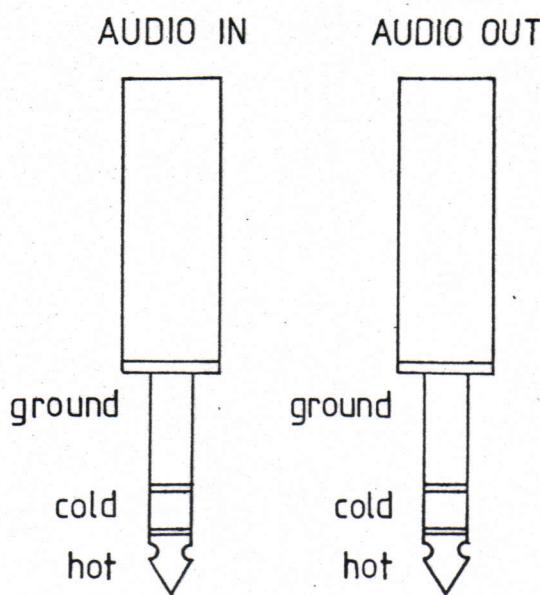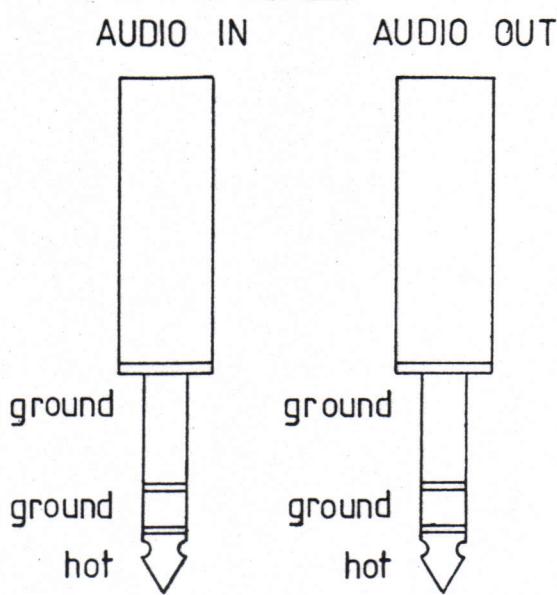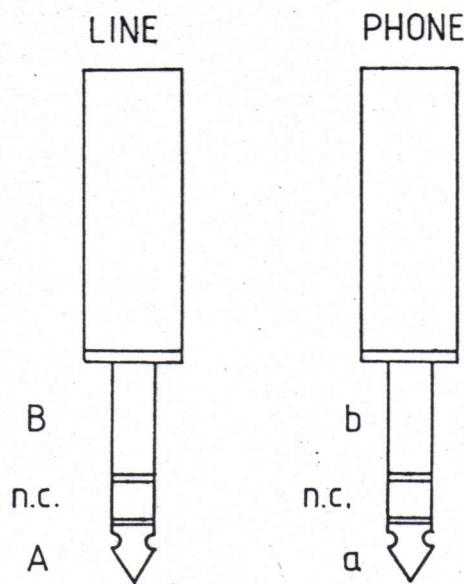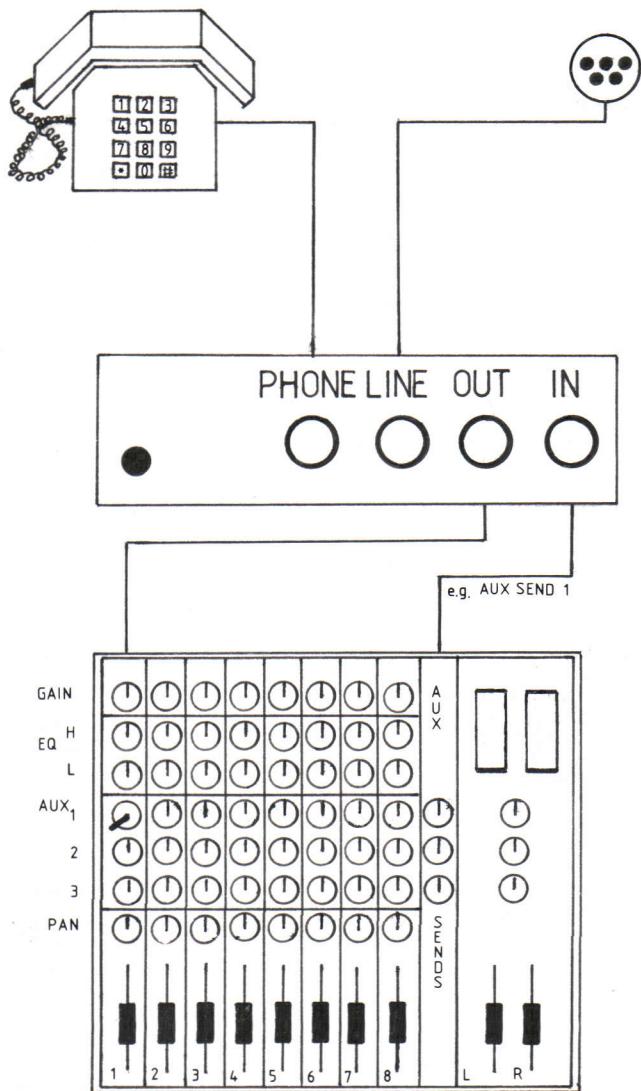
WARNING:

Be sure __AUX-SEND__ is __IN PHASE__ with __CHANNEL IN__.

WIRING DIAGRAM

PHONE LINE OUT IN

e.g. AUX SEND 1

GAIN

EQ H

L

AUX 1

2

3

PAN

AUX

SENDS

1 2 3 4 5 6 7 8

L R

BIJ SYMMETRISCH GEBRUIK

AUDIO IN

aarde

uit fase

in fase

AUDIO OUT

aarde

uit fase

infase

BIJ ASYMMETRISCH GEBRUIK

AUDIO IN

aarde

aarde

in fase

AUDIO OUT

aarde

aarde

in fase
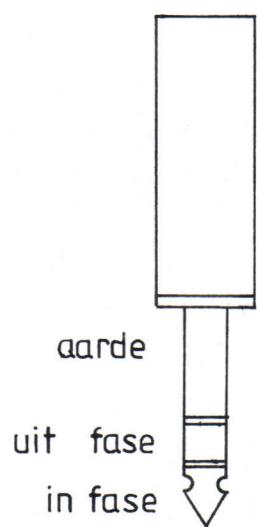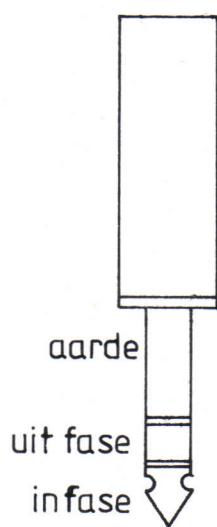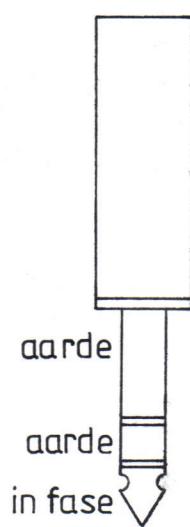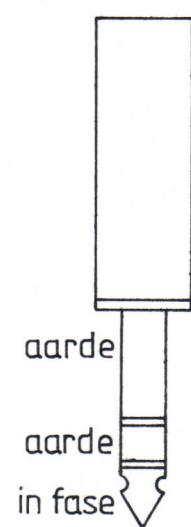
TELEFOON AANSLUITING

LINE

B

vrij

A

PHONE

b

vrij

a

J3
LINE

A
TIP

J
L K

TIP
a

J4
PHONE

R1

B1

C2
C3
R3
C4

1

M2 D2

TIP

C5 SLEEVE

J2
AUDIO
OUT

3

D1

R2

E

D3

S1

G
b
SLEEVE

H
I

F
D

4

5

R4

B
SLEEVE

P1

C6

TIP
B

A
C

A S2 C

B

R6

8

4

C11 C12 C13 C14

C10 C15

R4

AUDIO
IN

J1

SLEEVE

C1

M1

C9 6 7 C16

C8 C17

C7 C18

5

1

1

12

R5

S3

RING

R7
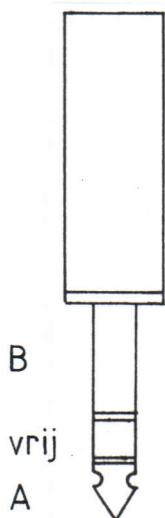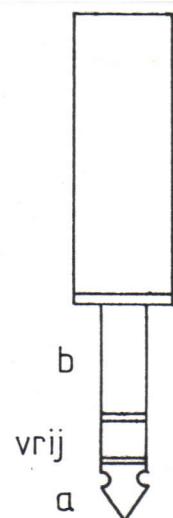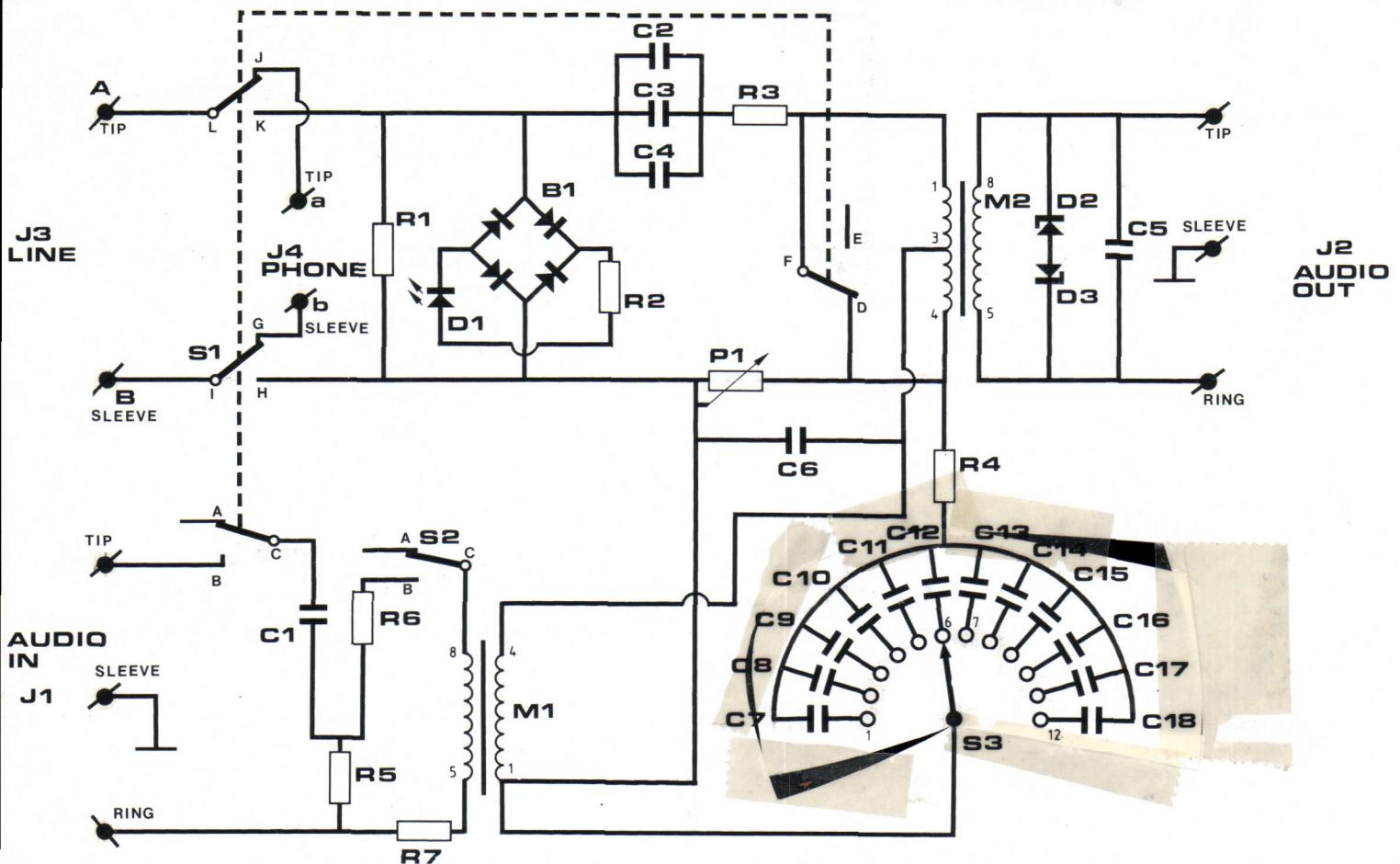
BOVENAANZICHT

S1– MBB
(HYBRID ON/OFF)
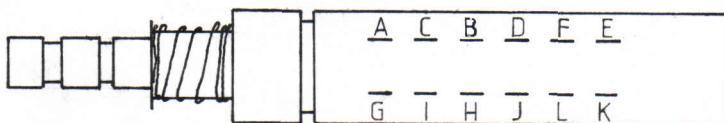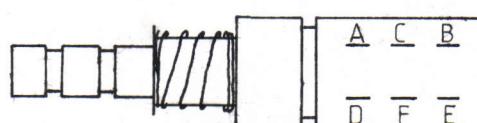
A C B D F E

G I H J L K

S2–BBM
(TO CALLER)

A C B

D F E

Title : TELEPHONE HYBRID

PartNr	Value	Notes	ArtNr
R1	604 E	1%	0792
R2	604 E	1%	0792
R3	560 E	5%	0726
R4	150 E	5%	0719
R5	47 k	5%	0749
R6	220 E	5%	0721
R7	220 E	5%	0721
C1	1 uF	poly	0268
C2	1 uF	poly	0268
C3	1 uF	poly	0268
C4	1 uF	poly	0268
C5	0.1 uF	poly	0261
C6	0.1 uF	poly	0261
C7	3300 pF	poly	0249
C8	0.01 uF	poly	0253
C9	0.015 uF	poly	0254
C10	0.022 uF	poly	0256
C11	0.033 uF	poly	0257
C12	0.047 uF	poly	0258
C13	0.068 uF	poly	0260
C14	0.1 uF	poly	0261
C15	0.15 uF	poly	0262
C16	0.18 uF	poly	0263
C17	0.22 uF	poly	0264
C18	0.33 uF	poly	0265
D1	LED	5x2mm rood	0390
D2-D3	5v6	zener	0351
B1	B80C1000	bridge rect.	0345
M1-M2	HAE-3261421-1	PTT-trafo	0014
P1	1 kA	12.5mm mono	0791
S1	FOX 4UEE MBB	switch 4xom	0963
S2	FOX 2UEE BBM	switch 2xom	0400
S3	1x12 standen	LORLIN	0315
J1-J4	Cliff break	plastic	0432

Onderdelenlijst van de pr<tel.hybrid

No.	—	ONDERDEEL	—	AANTAL	— STUKSPRIJS —	TOTAALPRIJS
0001	—	BESTUKKINGSLIJST	—	1	— , —	0,00
0014	—	Trafo ptt/type	—	2	— , —	0,00
0249	—	Cond 3300p poly	—	1	— , —	0,00
0253	—	Cond 0.01 uf pol	—	1	— , —	0,00
0254	—	Cond 0.015uf pol	—	1	— , —	0,00
0256	—	Cond 0.022uf pol	—	1	— , —	0,00
0257	—	Cond 0.033uf pol	—	1	— , —	0,00
0258	—	Cond 0.047uf pol	—	1	— , —	0,00
0260	—	Cond 0.068uf pol	—	1	— , —	0,00
0261	—	Cond 0.1 uf poly	—	3	— , —	0,00
0262	—	Cond 0.15uf poly	—	1	— , —	0,00
0263	—	Cond 0.18uf poly	—	1	— , —	0,00
0264	—	Cond 0.22uf poly	—	1	— , —	0,00
0265	—	Cond 0.33uf poly	—	1	— , —	0,00
0268	—	Cond 1 uf poly	—	4	— , —	0,00
0315	—	DraaiSchak. 1x12	—	1	— , —	0,00
0345	—	Brugcel B80C1000	—	1	— , —	0,00
0351	—	Zenerdiode 5v6	—	2	— , —	0,00
0365	—	Draadbrug 4.5 cm	—	4	— , —	0,00
0432	—	Clif break plas	—	4	— , —	0,00
0518	—	Draadbrug 1.5 cm	—	1	— , —	0,00
0719	—	Weerstand 150	—	1	— , —	0,00
0721	—	Weerstand 220	—	2	— , —	0,00
0726	—	Weerstand 560	—	1	— , —	0,00
0749	—	Weerstand 47k	—	1	— , —	0,00
0792	—	Weerst 1% 604E	—	2	— , —	0,00

Kostprijs : ongeveer Hfl. ▮▮▮▮