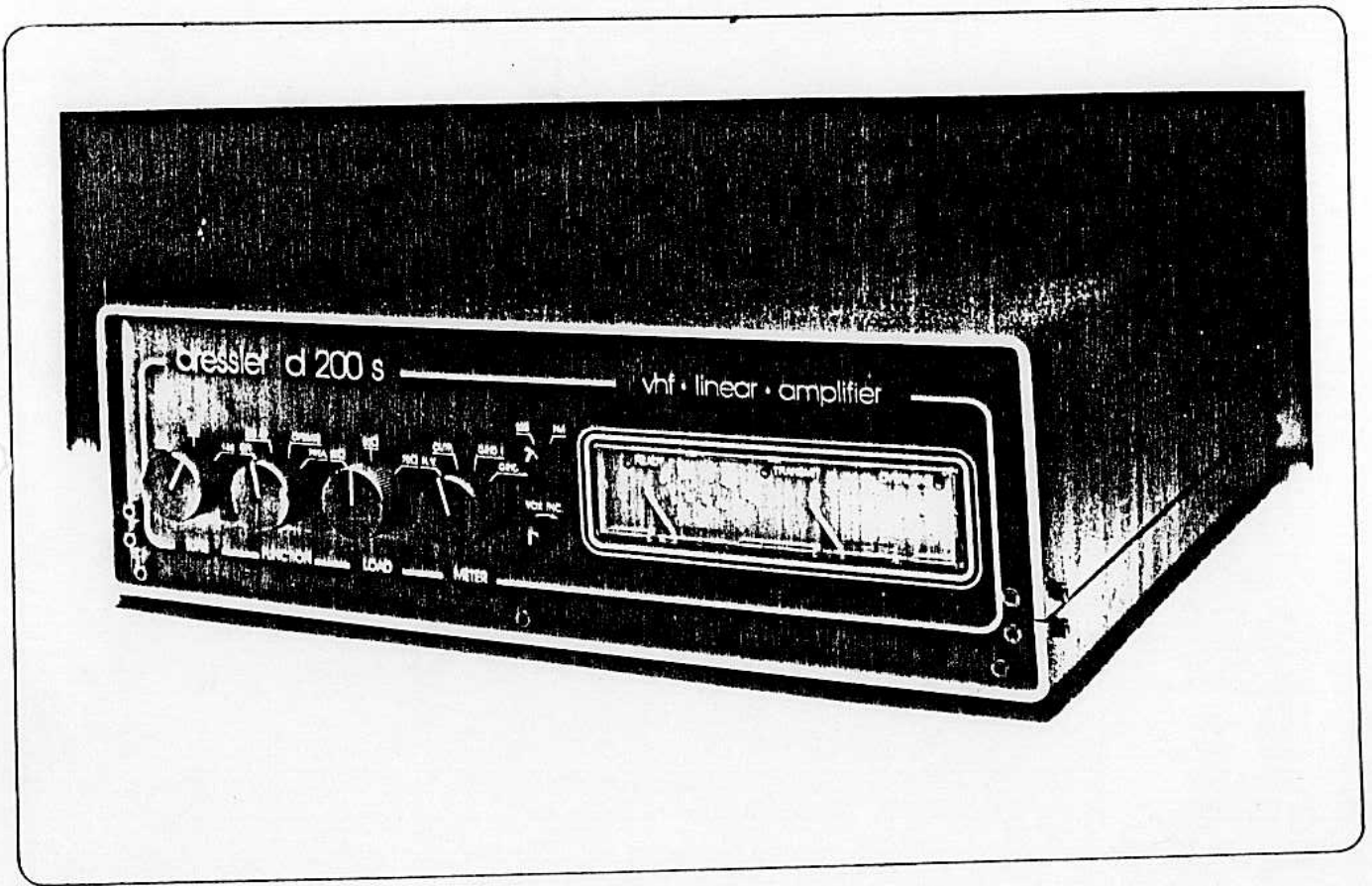


# dressler

## POWER AMPLIFIER



D 200 S · D 200 · D 70

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### INSTRUCTION MANUAL

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With your purchase of a DRESSLER-power amplifier you got a product, which presents very high mechanical and electrical stability.

This new mark of valve power amplifiers we think we could mature as a product which allows trouble free operation due to our experience in vhf-uhf-linears since many years.

To achieve optimal performance and reliability it is important to study this instruction manual and also to understand it.

We therefore would like that this manual will be studied thorough.

We would like to wish you much success and a lot of fun with your DRESSLER-power amplifier !

Yours sincerely

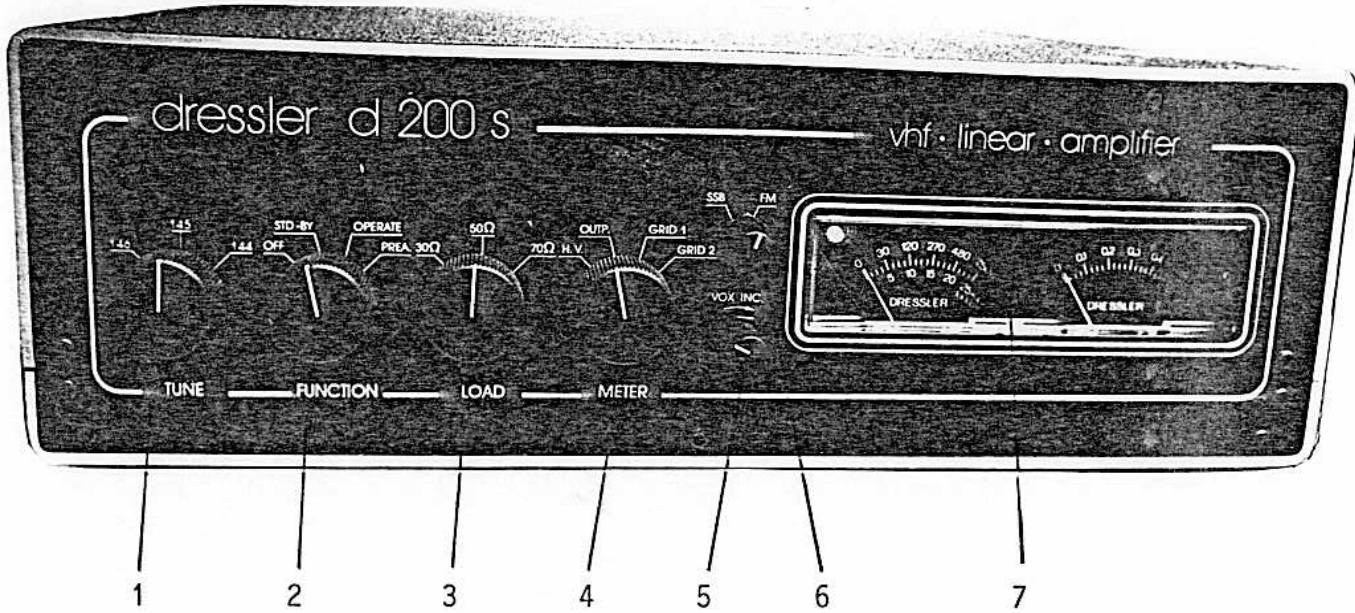
DRESSLER-HOCHFREQUENZTECHNIK-GMBH

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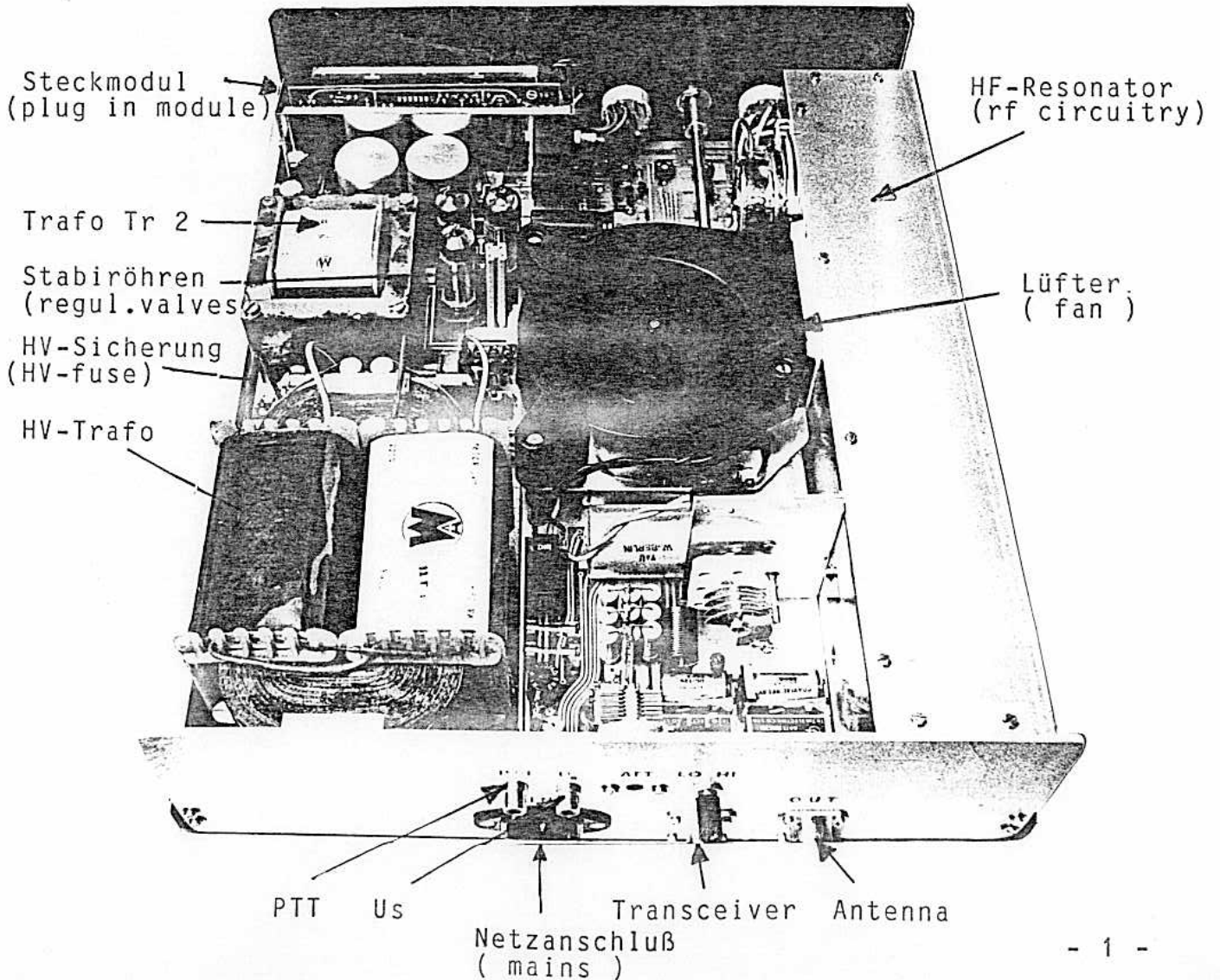
L I S T O F C O N T E N T S

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INNENANSICHT und RÜCKPLATTE  
( VIEW into PA and REAR VIEW )



## DESCRIPTION OF EQUIPMENT

Amplifier models D200, D200S and D70 are constructed by three main parts, easy of access and for convenient service :

A 3mm thick aluminium bottom chassis takes the high voltage transformer and by brass bars the 2,5mm thick pc-board taking the high-Q rf-resonator, power supply circuitry, control circuitry as well as front and rear panels. This construction is of very good mechanical and electrical stability.

At the amplifier front panel you can find following control elements :

1. TUNE for frequency tuning (by variable capacity) of the rf resonator in half wavelength technique at D200 and D200s. ( Model d70 in quarter wavelength )
2. FUNCTION - switch
3. LOAD for optimal coupling of rf power to the antenna or dummy load of 50 ohms.  
( these printed figures for impedance are approx. values and can deviate more or less from 50 ohms depending in antenna impedance )
4. METER - switch to change function of left meter. Here anode voltage (HV), relative output power (also only approx.value depending in antenna impedance), grid 2- and grid 1-current can be choosed.
5. VOX-DELAY - control. By turning VOX-DELAY clockwise vox-delay-time can be increased.
6. SSB-FM - switch ( Only at model D 200 S and D 70 )  
To change from FM to SSB/CW/RTTY mode.
7. Illuminated twin meter with LED-controls.  
The left meter indicates currents or voltage choosen by METER-switch.  
The right meter permanent shows actual anode current of EIMAC-valve.  
Above both meters three LEDs are arranged :

LEFT, GREEN LED indicated by illumination that power amplifier is ready for use after a warm up time of 80 seconds ( for protection of valve ) .

RED LED in the MIDDLE indicated TRANSMIT MODE -  
no illumination in receive mode or stand-by-mode.

RED LED at RIGHT indicates OVERLOAD status. When the power amplifier ( PA ) is overloaded this LED will illuminate by rhythmical twinkling - in addition with rhythmical sound of switching relays. This tells you, that the average anode current is too high. In that case it is recommended to interrupt operation by about 10 seconds on receive or stand-by mode. To avoid overload please check tuning procedure and/or reduce drive power either by the transceiver or by the ATT (attenuator) - trimming capacitor at the rear panel of the amplifier.

At the rear panel of the amplifier ( see figure ) following elements are arranged from left to right :

- In the middle ( below phono plugs ) the socket for mains cable is fixed. ( centre pin is ground = chassis )
- Above of that mains socket the phono socket left is for PTT-control. Here a PTT-line can be connected from the transceiver. The contact has to be closed for transmit mode. For VOX-operation ( rf sensing switch ) of PA no PTT-connection is necessary.
- BESIDE ( on right side ) that PTT-socket an additional phono socket called "Us" is fixed. Also this socket is to arrange a transmit/receive-switching by a positive switching (trigger) - voltage. Many modern transceivers ( ICOM...) offer such a switching voltage instead the conventional PTT-relay-contact. Centre pin of that socket takes positive voltage (Ground or Minus connected to ring) of 5...15 volts DC on transmit mode - 0 volts on receive.

To take opportunity of one of these sockets is recommended because of better and exactly switching times. Especially when mast head preamplifiers are used this is hardly recommended.

- Right beside phone socket "Us" you will find a hole in the rear panel with an attenuator-trimmer behind it. Here the drive power level to grid 1 of the valve can be reduced to desired levels.
- Right below that a rf-socket type BNC is for connection of the coaxial cable from transceiver to power amplifier. That socket is marked "IN" and has an impedance of 50 ohms.
- The rf-socket type N labeled "OUT" takes the coaxial cable to antenna or mast head preamp. Impedance is 50 ohms and the cable should be strong enough to handle higher power levels.

## DESCRIPTION OF MODEL D 200 S

In addition to our explanations before two more facts are to be noticed when you possess of model D 200 S :

- Switch " FM/SSB " at front panel effects the bias of the EIMAC-valve. In position "SSB" the valve is operating in bias mode AB1 with an anode quiescent current of approx. 80 mA .  
In position " FM " quiescent current of the EIMAC-valve nearly is ZERO ( 0 mA ), which represents bias mode B. With reduced drive power you can make FM-transmissions also in switch position "SSB" together with a reduced efficiency.  
On the other hand SSB-transmissions never should be made in switch position "FM" because of the mode B - bias strong distortion and bad intermodulation performance occurs.  
( The so called "wide signal" or splatter effects...)
  
- At the rear panel of model D 200 S there is a switch called " LO-HI " , which by-passes the input attenuator ( ATT ) in switch position "HI". So it is possible to achieve output power levels up to 900-1000 watts PEP at 10-12 watts drive power in SSB-mode , because full drive power now feeds grid 1 of the EIMAC-valve. This only should be made at short periods in special cases such as EME, MS ... because of worse intermodulation performance of your transmission signal ( stronger splatter products). At "normal" operation the switch "LO-HI" should be left in position "LO" which means maximum output power of abt. 700-750 watts PEP in SSB mode.  
If your transceiver does produce more than 12 watts of output it is hardly recommended never to switch to "HI", because a grid 1 - current could occur and this easily can destroy the valve 4CX350A. In opposite to other types of this valve line this model 4CX350A cannot handle any grid-1-current !  
Again we want to express, that in switch position "HI" the grid-1-circuitry and your transceiver is coupled straight together and full drive power appears at grid 1. In case of switch "LO-HI" in position "HI" drive power may not exceed 10-12 watts PEP.  
Otherwise the very expensive valve can be destroyed and EIMAC-valves are covered by special warranty regulations and never are under DRESSLER-warranty !

## O P E R A T I O N   P R E C A U T I O N S   D 200 and D 200 S

### PREPARATIONS

Before your want to start operation of a DRESSLER PA make sure that following facts are existing :

1. Mains supply voltage should be 220 volts AC 50 Hz.  
( If not otherwise stated at export models - export models also can have 240 volts or 110 volts )
2. Antenna coaxial cable with low VSWR ratio lower than 1 : 1,5 if possible.
3. Coaxial cable of 50 ohms impedance between transceiver and power amplifier.
4. If possible, shielded af-cable should be chosen as the connection cable between transceiver and PTT or Us-socket of power amplifier. ( If no RF-VOX-operation is desired )
5. Find a free frequency in the frequency range for first tune up procedure
6. The power amplifier needs enough of clean air for the internal blower (fan). Make sure that the DRESSLER-PA gets free distance below the chassis plate and also at the left side for outstream of warm air.

The internal input attenuator ( ATT-trimming capacitor of power amplifier ) is set to drive levels of 10 watts by the manufacturer and will be left in that position for the beginning.

### T U N I N G   P R O C E D U R E

Switch "FUNCTION" from position "OFF" to "STBY" . Also switch knob "METER" should be in position "HV" (anode voltage). After switching the power amplifier ON, the filament of the valve starts working and all low voltages are supplied to the valve. After this procedure of approx. 80 seconds the GREEN LED "READY" must illuminate and indicates, that now the PA is ready for power amplification. Change position of the switch "FUNCTION" to "OPERATE" and start the PA tuning procedure as follows :



- "METER" - switch now has to be turned into "OUTPUT" position. A transceiver or transmitter now can be activate with an output power (now drive power) of a maximum of 10-12 watts. To that drive power the PA is preset by the factory. At higher drive power levels ( for example 25 watts ) the "ATT"-trim capacitor at the rear panel must be used for attenuation.
- By activating the transceiver to transmit, the power ampl. should switch to transmit also (RED LED - also you can hear the relays working). With the control "TUNE" A dip (minimum) of anode current must be found with help of the meter right hand.  
Control "LOAD" finally is turned in a position to find maximum output power with help of meter at left (switched to "OUTPUT").  
This procedure to find a maximum output power with both controls TUNE and LOAD must be repeated alternating up to a solid maximum is found. Together with that maximum of output power the anode current should be at it s minimum. Controls LOAD and TUNE will have influence to each other. This tuning procedure must be done in short intervals to protect the valve - the anode currents should not exceed 300 mA. Otherwise the build-in protection circuitry will become active and will block the PA to by pass. ( That means, that drive power appears at PA output ).

A frequency change of 0,5 MHz or more needs a repetition of the tuning procedure to optimize the "TUNE"- and "LOAD"-positions found before to be optimal. Same aspect is valid for changed drive power levels. A drive power of for example 5 watts instead of 10 watts needs a corrigated tune-up-procedure.

After this tune up you can start transmissions in SSB modulation, because these high power levels like appearing in the tuning procedure are allowed to run on SSB permanently. In FM modulation you have to check after tuning up, if the anode current does not exceed 300 mA, because otherwise the protection activates.

Most of the modern vhf- and uhf-transceivers are producing 10 watts of output power, which is too much for FM operation with the DRESSLER PA. In that case change the preset of the "ATT" control at the rear panel by use of the special screw driver delivered with the equipment in that way, that anode current keeps below 300 mA or less !

Now the tuning procedure with "TUNE" and "LOAD" has to be repeated, by use of the "ATT"-control you can reduce the anode current if it should rise again to more than 300 mA.

At last the left hand meter allows to control all grid - currents. Knob "METER" in position "GRID 1" shows the grid-1-current. Only at too high drive power levels and overloading of the valve a grid-1-current will be seen - at normal conditions grid-1-current must be zero.

"METER"-control positioned to "GRID 2" allows to display the current of grid-2. Value can be normally between 0...25 mA ( 25mA at highest power outputs). A very high current into grid-2 indicates, that the impedance presented to the output of your DRESSLER-PA deviates from 50 ohms. ( Or the power amplifier is not tuned up properly )

#### S T A N D - B Y - O P E R A T I O N

If you wish to run a transmission without power amp you can by-pass the DRESSLER PA easily by means of the "FUNCTION"-control set into position STD-BY. Now the drive power is radiated, which is recommended in case of no-DX communication ( local... ). The very low insertion loss of a DRESSLER amplifier allows to leave the PA into the coaxial cable all the time.

#### O P E R A T I O N W I T H P R E A M P L I F I E R

If you wish to use a high power antenna preamplifier together with the power amplifier ( for example DRESSLER models VV200GAAS or VV2000GAAS ), you can use the internal preamp.supply and switching of the PA. "FUNCTION"-control to position "PREA" means, that in receive mode a 15-volts-DC appears to the output terminal for supply and receive/transmit switching of preamps via the coaxial cable. DC exists in receive mode and disappears in transmit-mode.

When a mast head preamp is planned to be used , make sure that no more RF-VOX-operation is be made with the power amplifier due to damage of the preamplifier by rf-power on short transmit peaks !

In that case connection between your transceiver and either the "PTT" or "Us" terminal allows exactly switching without danger for preamp on low and moderate output power levels. When the DRESSLER PA mostly is used on high power outputs use of the external DRESSLER VV-INTERFACE is the safest way to switch and feed the mast head preamplifier because of delayed switching between preamp-off and PA-on. The VV-INTERFACE is not expensive and also allows to operate the preamp i case of the power amplifier is switched off.

Also pay attention to the fact, that control "FUNCTION" never is set to the "PREA"-position when no preamplifier is installed !!! In that case a short DC-path (some antennas have) could destroy the voltage-regulator IC (uA 7815).

## A D D I T I O N A L F E A T U R E S O N D 2 0 0 S

### CONTROL SSB / FM

Compared with model D 200 , model D 200 S and D 70 offer one more control at the front panel : switch SSB/FM .

Control position FM Especially for FM transmissions.  
Also can be used for CW ( on moderate output power levels)  
Never select "FM" when transmissions in SSB-modulation are made .

Control position SSB Linear amplification - especially for transmissions in SSB, RTTY where linearity is required.  
Also for CW at higher output levels.

### CONTROL HI / LO

To operate model D 200 S at highest possible power levels which the EIMAC 4CX350a allows, the internal input attenuator can be by-passed by means of control switch "HI-LO" at the rear panel of the amplifier ( Select position "HI" ).  
At position "LO" the input attenuator is active and offers a reduction of power drive level suitable to most desired output powers.

When control position "HI" is selected full drive power is fed to the grid-1-circuitry of the valve. So make sure, that drive power never exceeds 10-12 watts !

In high power position of switch "HI-LO" maximum power levels can be achieved to :

850 ... 1000 watts PEP	in SSB
500 ... 700 watts	in CW

At these high power levels pay attention to all other components of your radio system where power is applied to, such as coaxial cables, rf-connectors, antennas and antenna couplers.

Also we recommend to use a POWER/VSWR meter between power amplifier and antenna cable to make sure, that always the amplifier is tuned to maximum forward power.

Often power amplifiers are running in a mistuned condition. This means that the expected long life of your PA is reduced by low efficiency and high dissipation power. Mismatch also creates additional distortion products and harmonics which easily can disturb other radio services, radio and TV.

If a drive power more than 10-12 watts is used we again want to remember, that the rear control "HI-LO" is set to the "LO" position, which activates the input attenuator. By use of the variable attenuator "ATT" at the rear panel the maximum anode current should be set to values which are not exceeding 500 mA on tuning procedure when TUNE and LOAD are properly positioned.

Control position "HI" on the rear panel only should be applied to DX conditions where highest possible output power is necessary - such as EME or Meteor scatter.... Because the EIMAC tetrode 4CX350A will be leaving a bit the range of linear amplification, more distortion and a "broad signal" is the result. Output power below 700 watts PEP still offers very good intermodulation performance and a "clear signal". Remember that an increase in output power from for example 600 watts to 900 watts is not remarkable for normal DX !

#### D I S T U R B A N C E     B Y     P A - O P E R A T I O N

In practice nearly every owner of a high power amplifier will experience, that other amateur radio operators attest a "broad" and bad signal which "splatters over the whole frequency range...".

This experience is valid for every very high power ampl. and not typical for a DRESSLER PA.

The situation is, that our linear amplifiers are of very narrow and clean signal when the valve is not overloaded.

The intermodulation performance running 700 watts with model D200s or 400 watts with model D200 will be better than most of all transistorized amplifiers of 80 watts output.

So the reason for the attested "broad" signal you can find in an overloading effect in the receiver front end, which cannot handle field strengths produced by very high power linear amplifiers. If an attenuator is connected to the input of the receiver or the antenna is turned to lower field strength mostly the overload disappears. This is a proof for the fact, that the so called "distortion" is not on your side of the power amplifier.

#### C O N S I D E R A T I O N S     O N     P O W E R     L E V E L S

Following scheme gives an idea what maximum power outputs can be achieved and what reasonable output power level should be made with different models :

MODEL	VALVE	REASONAB.OUTPUT FM/SSB	MAXIMUM OUTPUT FM/SSB
D 200	4 X150A	100-150 W / 300 W SSB	150-200 W / 450-500 W
D 200	4CX250B	150-250 W / 300 W SSB	250-300 W / 480-550 W
D 200	4CX250R	150-250 W / 350 W SSB	250-350 W / 480-600 W
D 200 S	4CX350A	200-300 W / 400-700 W	300-400 W / 750-1000W
D 70	4CX250R	150-200 W / 300-350 W	200-250 W / 450-550 W

## R E P L A C E M E N T   O F   F U S E S

The DRESSLER power amplifier possesses of three fuses ( see photo attached - internal view ) :

- primary fuse 1,6 A (inert) for all supply voltages without high voltage (HV) transformer
- primary fuse 6,3 A (inert) for HV-transformer
- secondary fuse 0,8 A / 3 KV for anode voltage

Damaged fuses have to be replaced by same fuses. Replacement HV-fuses (3KV/0,8A) are available at your national agent in packings of five pieces.

## R E P L A C E M E N T   O F   V A L V E

To get access to the EIMAC valve loosen the four screws to remove the top cover. Then the aluminium resonator box top has to be opened by removing all 3mm screws holding it.

Both 3mm screws at the anode sheet metal have to be loosen. Furthermore now one long metal screw behind the anode sheet metal has to be loosened by 2 turns left. Carefully now the valve can be moved for a few millimeters with a scrwe driver. After that the valve can be taken out by use of your fingers.

When a new valve is build in, make suke sure that the grid pin is fitting exactly into its hole of the valve socket. Be carefully, don t use any pressure to press the tube into the SK600 socket.

The mentioned long metal screw must be fixed again and also be sure, that :

1. the anode rf choke is fixed exactly into the cavity aluminium box having an approx. 4mm distance to the aluminium wall. Check if the rf choke is fixed to the anode bracket and high voltage capacitors.  
( New models possess of an own construction of HV-capacitor made by aluminium and PTFE , before we used 2 pieces blue ton HV-capacitors 9 KV / 100 pF )
  2. the anode fixing bracket is positioned in that way, that the anode tuning capacitor (brass sheet metal) is parallel to the bending of anode bracket. A distance of 3mm must be between anode plate and turning capacitor plate. If this distance exists, fix both 3mm screws at their ceramic supports.  
( Be carefully ! Make sure that no metal or dust pieces are keeping inside the resonator box ! )
- Eventual dirty section have to been cleaned by alcohol. Before the top cover of the cabinet is fixed, clean the main pc-board and all other section by dust and metal or solder particles.

Then fix the top cover by four screws of 3mm.

ATTENTION : Before the new valve is used for power amplification a burn-in of the valve of approx. one hour is absolutely necessary ! Otherwise damage or bad performance can be the result .  
This heating procedure of the valve should be done as follows :

After replacement of valve do not fix the top cover and remove the fuse of 6,3 A out of its socket. This realizes a blocking of the high voltage transformer.

Now the power amplifier can be operated by connection to the mains supply for approx. 1 hour.

Control switch "FUNCTION" must be set to position " STBY " .

After burn in procedure the power amplifier can be switched off and the mains supply cable has to be disconnected. Fit the fuse of 6,3 A (removed before) again into the fuse socket.

After fixing the cabinet top cover the amplifier is ready for use again.

BLICK IN DAS GERÄTEINNERE  
INTERNAL VIEW

Steckmodul  
(plug in module)

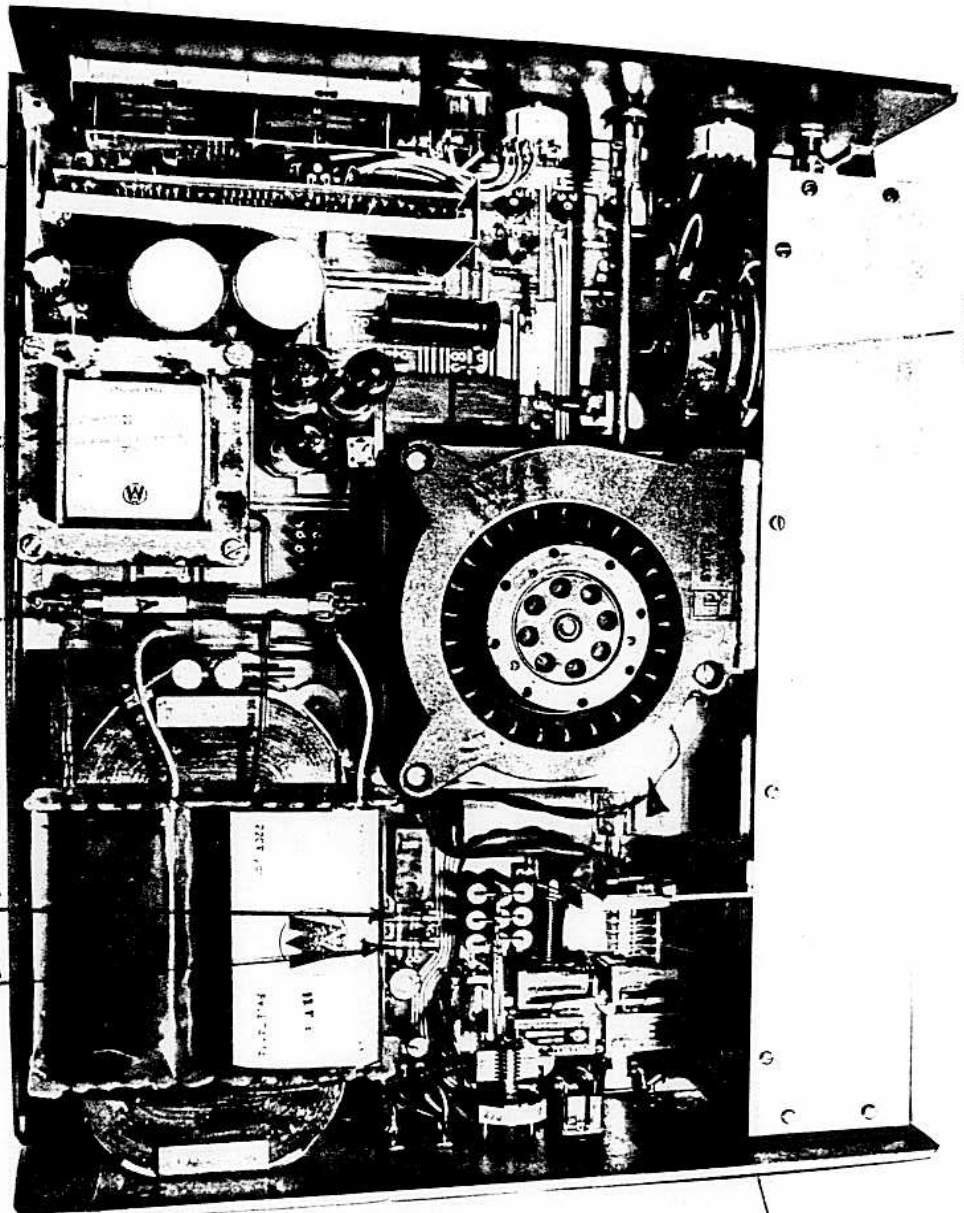
Stabiröhren  
(voltage regu-  
lator valves)

Sicherung 3KV  
(HV fuse 3KV)

Sicherung 6,3 A  
( fuse 6,3 A )

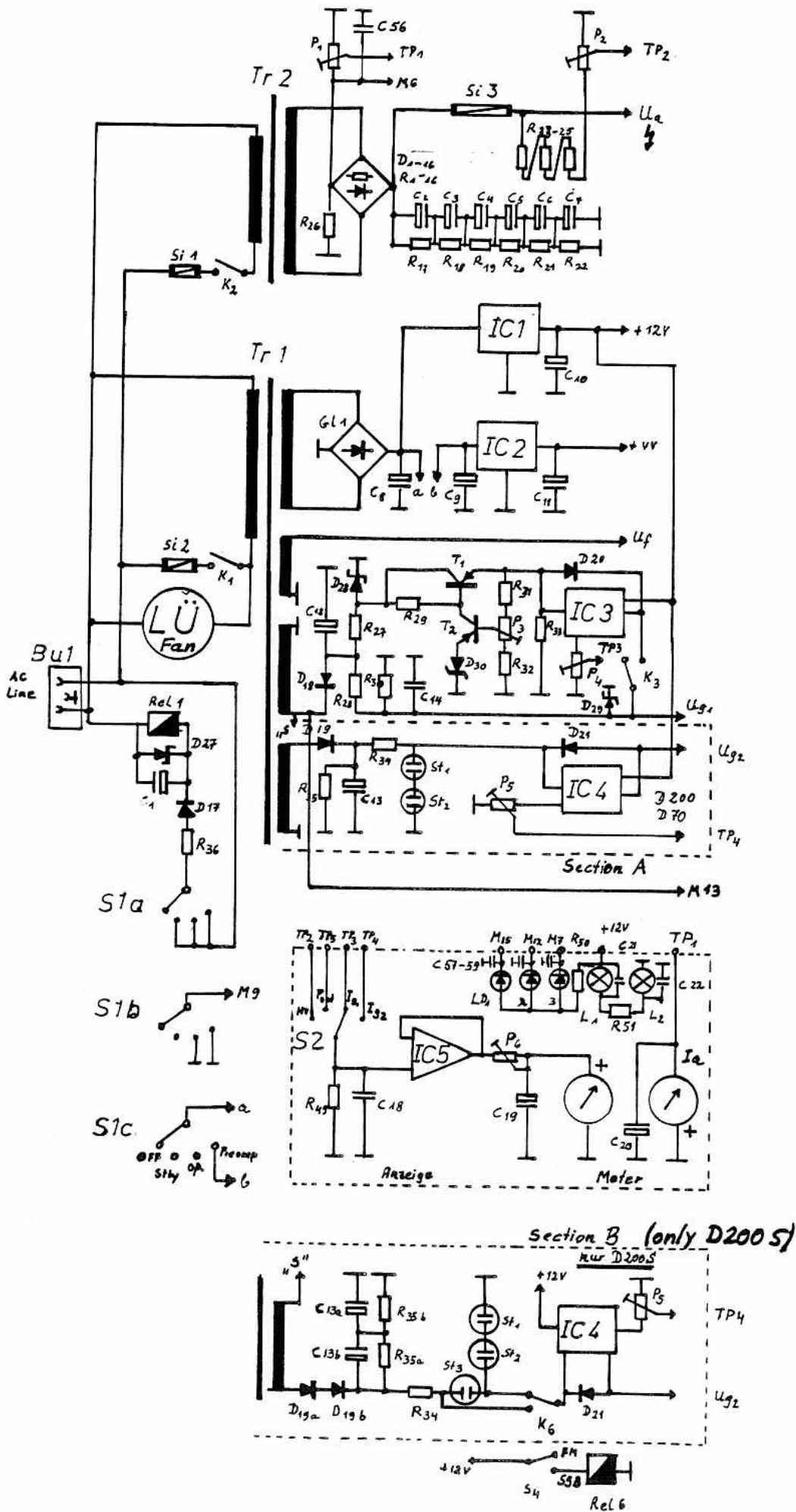
Sicherung 1,6 A  
( fuse 1,6 A )

Röhrenso-  
( valve  
socket



Die 100uF-550V-Elkos liegen  
unter dem Lüfter  
(HV-capacitors 100uF-550V  
see below the fan )

Schaltbild DC - Teil  
 circuit diagram DC - section





STÜCKLISTE DC-TEIL - PARTS LIST DC-SECTION

D 200 und / and D 200 S

WIDERSTÄNDE / RESISTORS

R 0	1	0hm	
R 1...16	1,5	M0hm	1W
R 17...22	470	K0hm	2W
R 23...25	1,5	M0hm	1W
R 26	4,7	0hm	5W
R 27	3,3	K0hm	
R 28	47	K0hm	
R 29	3,3	K0hm	2W
R 30	100	K0hm	
R 31	10	K0hm	
R 32	56	K0hm	
R 33	12	K0hm	
R 34	3,3	K0hm	11W
R 35a	470	K0hm	2W
	(nur/only D 200 S )		
R 35b	470	K0hm	2W
R 36	4,7	K0hm	3W
R 37...45	680	0hm	2W
R 47	1	M0hm	
R 48	820	0hm	

KONDENSATOREN / CAPACITORS

C 1	100 uF / 40 V
C 2...7	100 uF / 550 V
C 8	1000 uF / 25 V
C 9	10 uF / 35 V
C 10	10 uF / 25 V
C 11	10 uF / 35 V
C 12	47 uF / 350 V
C 13a	100 uF / 550 V
C 13b	100 uF / 550 V
	(Nur/only D 200 S )
C 14	1 nF Keram.
C 15...16	1 nF 3KV ker.
C 23	1 pF Keram.
C 24	1 nF Keram.
C 37	2 pF Keram.
C 38	1 nF Keram.
C 40...55	1 nF Keram.
C 57...59	10nF Keram.
C 60...63	1 nF Keram.

DIODEN / DIODES

D 1...16	1 N 4007
D 17	1 N 4007
D 18	1 N 4007
D 19a	1 N 4007
	( nur/only D 200 S )
D 19b	1 N 4007
D 20	1 N 4007
D 21	1 N 4007
D 25	1 N 4148
D 26	1 N 4148
D 27	ZPY 33
D 29	ZPY 56
(D 29	ZPY 68
	( 4CX250R versions)
D 30 (D200S)	ZPY 16
D 30 (4X150A )	ZPY 33
D 30 (4CX250B)	ZPY 33
D 30 (4CX250R)	ZPY 47
D 31	1 N 4007
D 32	1 N 4007
D 33	1 N 4007

GLEICHRICHTER / RECTIFIERS

GL 1	B 40/ C 800
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STABILISATOREN / VOLTAGE REGULATORS

ST 1 (4 X150A)	0A 2
ST 1 (4CX250B)	0A 2
ST 1 (4CX250R)	0B 2
ST 1 (4CX350A)	0B 2
ST 2 (4 X150A)	0A 2
ST 2 (4CX250B)	0A 2
ST 2 (4CX250R)	0B 2
ST 2 (4Cx350A)	0A 2
ST 3	0A 2
	(nur/only D200S)

TRANSISTOREN / TRANSISTORS

T 1	BD 136
T 2	BC 557

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STÜCKLISTE    DC-TEIL       -       PARTS LIST    DC-SECTION  
                  D 200    und / and    D 200 S

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ICs / INTEGRATED CIRCUITS

IC 1            uA 7812  
IC 2            uA 7815  
IC 3            TIL 112  
IC 4            TIL 112

TRIMMER / VARIABLE RESISTORS

P 1            10 KOhm PIHER  
P 2            10 KOhm PIHER  
P 3            25 KOhm PIHER  
P 4            1 KOhm PIHER  
P 5            1 KOhm PIHER  
P 7            5 KOhm PIHER

HF-DROSSELN / RF-CHOKES

DR 2 = RFC 2        VK 200  
DR 3...7            "        "  
(RFC 3...7)        "        "  
DR 8 = RFC8        Luftdrossel (air wounded choke)

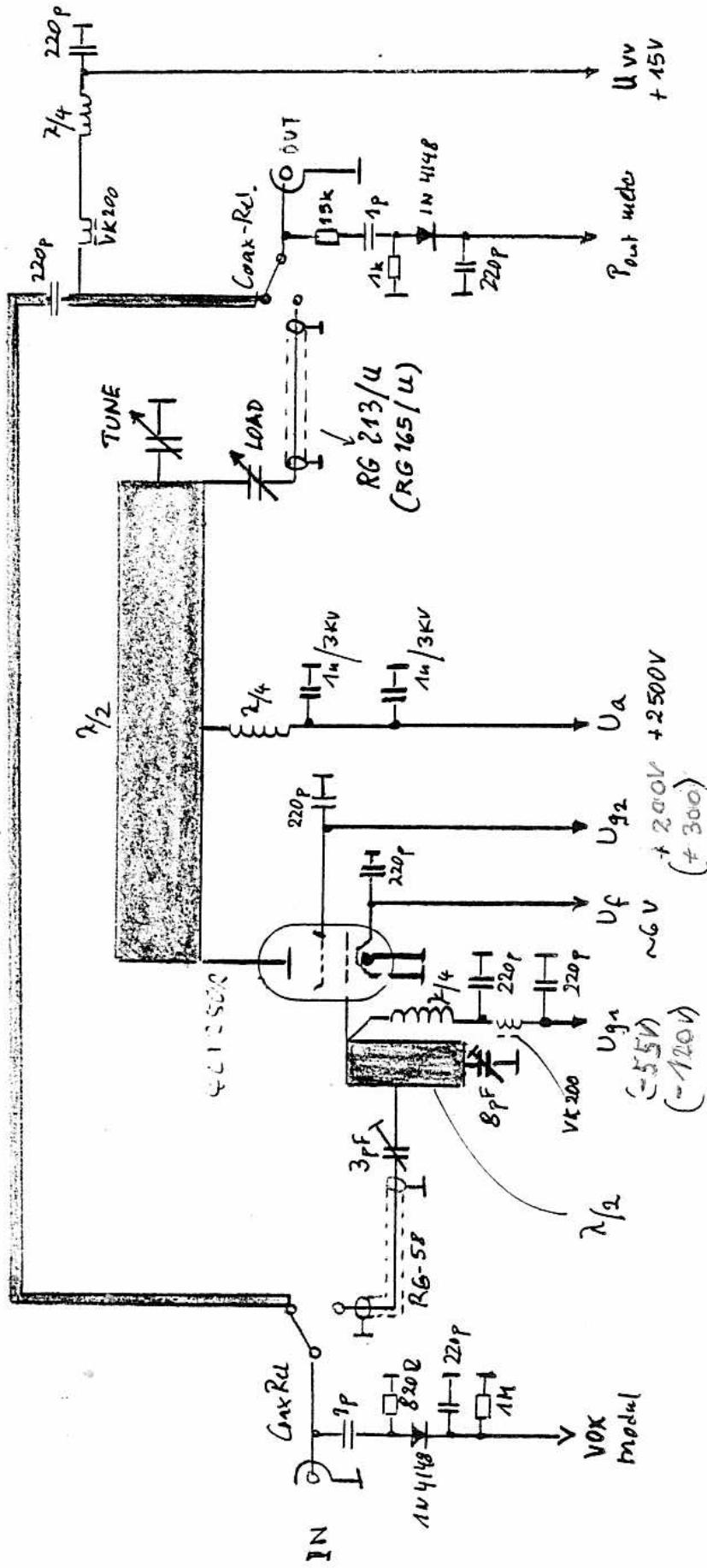
RELAIS / RELAYS

REL 1            B 0006-A102  
REL 2            B 0002-A101  
REL 3            A 0002-A101  
REL 4...5        CX 120 P K0ax  
REL 6            A 0002-A101 ( nur/only d200S)  
REL 7            NF 12 NATIONAL

SICHERUNGEN / FUSES

SI 1            1,6 A    träge  
SI 2            6,3 A    träge  
SI 3            0,8 A / 3 KV

50 Ω - Stripline



HF-System D 70

Bl. 17. 82

**dressler**  
hochfrequenztechnik gmbh

Jakobsstr. 161/163 - Tel. 0241/27869  
D-5100 Aachen - West Germany

STÜCKLISTE	HF-STUFE	D 200	und	D 200 S
PARTS LIST	RF-SECTION	D 200	and	D 200 S

RÖHRE / VALVE EIMAC 4X150A, 4CX250B, 4CX250R, 4CX350A

WIDERSTÄNDE / RESISTORS

R 37...45	680 Ohm	2 Watt
R 46	4,7 KOhm	
R 47	1 MOhm	
R 48	820 Ohm	
P 7	Trimmer	5 KOhm PIHER

KONDENSATOREN / CAPACITORS

C 15	1 nF	
C 17	1 nF	/ 3 KV
C 23	1 pF	
C 24	1 nF	
C 26	Trimmer	55 pF TRONSER
C 27	1 nF	/ 3 KV
C 28	1 nF	
C 29	1 nF	/ 3 KV
C 30	Tune-Flügel	/ tune-capacitor
C 31	Sockelklatschkondensator (capacitor at socket)	
C 32...33	HV-Kondensatoren 100 pF / 9 KV ( Aluminiumblockkondensator seit November 1982 own aluminum construction since Novembre 1982	
C 34	1 nF	
C 35	13 pF	Drehkondensator/tuning capacitor TRONSER
C 36	1 pF	
C 37	1,2 pF	( spätere Versionen Widerstand 100 Ohm
C 38	1 nF	
C 39	1 nF	

HF-DROSSELN / RF-CHOKES

RFC 1	Luftdrossel	/ air wounded choke
RFC 2	VK 200 ferrite	
RFC 3	VK 200 ferrite	
RFC 5	VK 200 ferrite	
RFC 8	Luftdrossel	/ air wounded choke

RELAIS / RELAYS

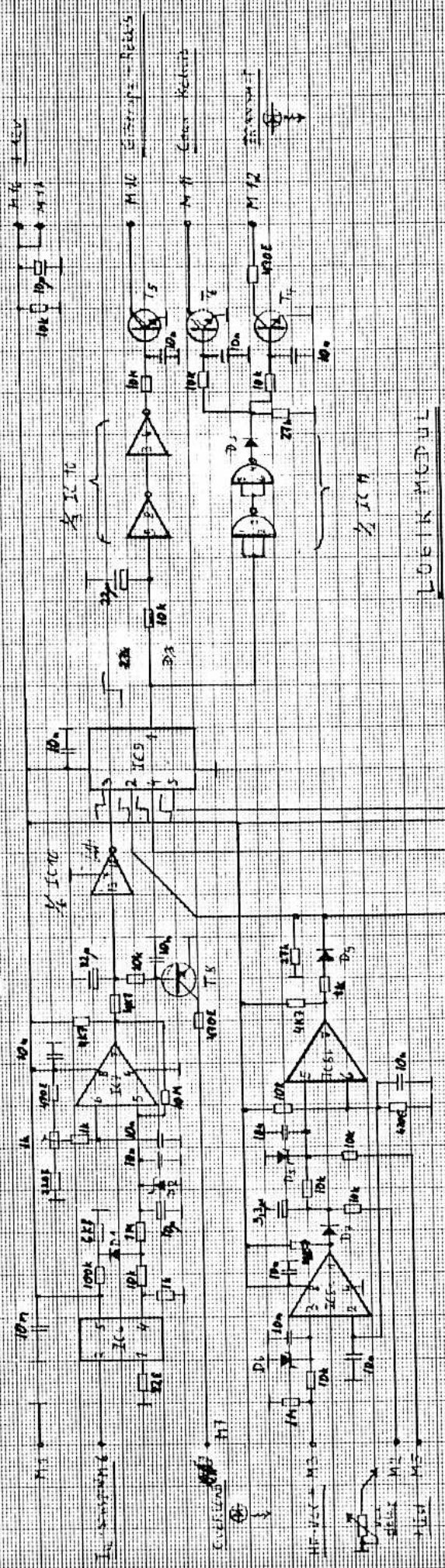
REL 4	Koaxialrelais	CX 120 P
REL 5	Koaxialrelais	CX 120 P
REL 7	NATIONAL NF 12	( 2 X UM ) (NUR BEI MODELL D200S)

SCHALTER / SWITCHES

S 3	Schalter	1X UM (NUR BEI MODELL D200S)
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Beim Modell D200 fehlt das Relais 6 - hier sind die Punkte K6a und K6b miteinander verbunden

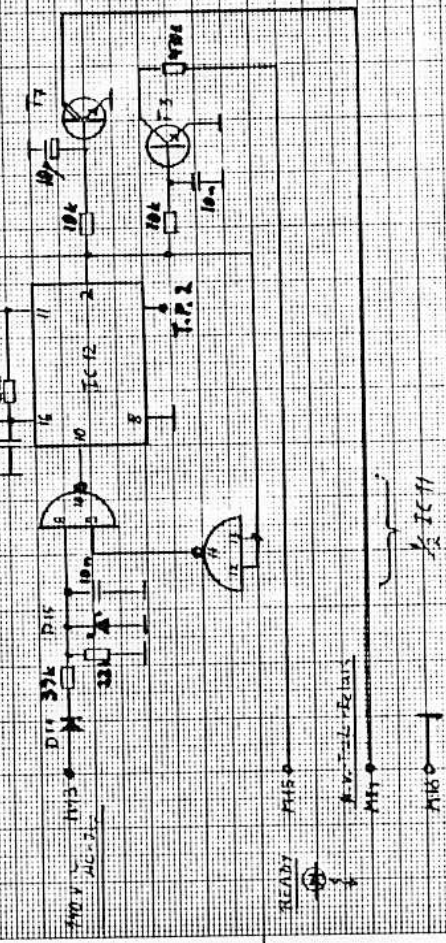
Model d200 does not possess of relay no.6 - here points K6a and K6b are connected - 18 -



Produktion: M4-M58 von 2 x 9 pro 2-Substraktion  
 Platine: Dicke 1,70 [6,5 x 125 mm]  
 [ 230C [ 62 x 125 mm ]



(Steckverbind.)



LOGIK MODUL

Steckkarte

T.P. 1 = 12V 1-1,62 von 5mm Einbaueinheit  
 = 12V 1-1,62 von 5mm Einbaueinheit

AL 11.82

WIDERSTÄNDE / RESISTORS

R 1	22	Ohm
R 2	1	KOhm
R 3	10	KOhm
R 4	1	MOhm
R 5	100	KOhm
R 6	6,8	KOhm
R 7	220	Ohm
R 8	470	Ohm
R 9	1	KOhm
R 10	10	MOhm
R 11	4,7	KOhm
R 12	4,7	KOhm
R 13	10	KOhm
R 14	470	Ohm
R 15	10	KOhm
R 16	22	KOhm
R 17...21	10	KOhm
R 22	1	MOhm
R 23	4,7	KOhm
R 24...27	10	KOhm
R 28	470	Ohm
R 29	4,7	KOhm
R 30	1	KOhm
R 31	27	KOhm
R 32	470	Ohm
R 33	1	KOhm
R 34...35	10	KOhm
R 36	1	KOhm
R 37	39	KOhm
R 38	22	KOhm
R 39	10	KOhm
R 40	22	KOhm
R 41...42	10	KOhm
R 43	470	Ohm

KONDENSATOREN / CAPACITORS

C 2	10	uF Tantal
C 3...5	1	nF Keram.
C 6	22	uF Tantal
C 7...8	1	nF Keram.
C 9...10	22	uF Tantal
C 11...16	1	nF Keram.
C 17	3,3	uF Tantal
C 18...23	1	nF Keram.
C 24	1	uF Tantal
C 25...26	10	uF Tantal

TRIMMWIDERSTÄNDE / VARIABLE RESISTORS

P 8	1	KOhm PIHER
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DIODEN / DIODES

D 1	1 N	4148
D 2	ZPD	10 Volt
D 3	1 N	4148
D 5	ZPD	10 Volt
D 6	1 N	4148
D 7	ZPD	10 Volt
D 8...10	1 N	4148
D 11...12	ZPD	10 Volt
D 13	1 N	4148
D 14	ZPD	10 Volt

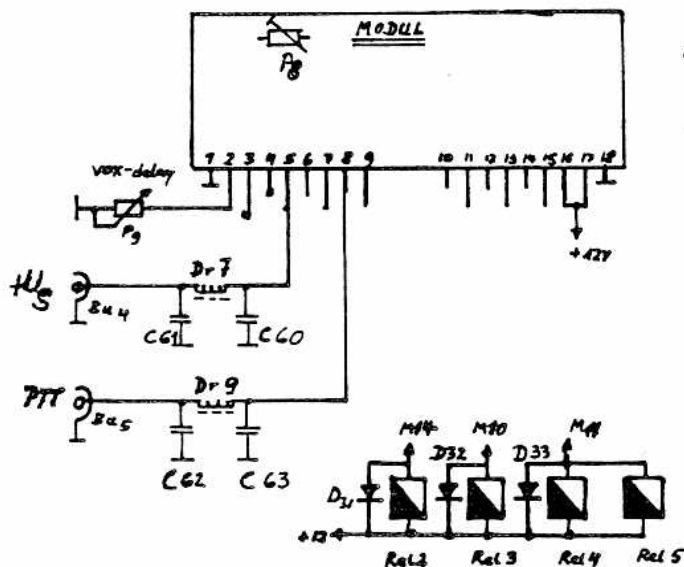
TRANSISOREN / TRANSISTORS

T 3	BC 547
T 4	BC 547
T 5	BD 677
T 6	BD 677
T 7	BD 677
T 8	BC 547
T 9	BC 547

IC s / INTEGRATED CIRCUITS

IC 6	TIL 112 (TI)
IC 7	LM 393 N
IC 8	LM 393 N
IC 9	CD 4020
IC 10	CD 4069
IC 11	CD 4011
IC 12	CD 4082

SCHALTPLAN MODULANSCHLÜSSE UND STÜCKLISTE  
CIRCUIT DIAGRAM MODULE CONNECTIONS AND PARTS LIST



RL pins M2... M17  
 bypassed with ceramic  
 capacitor 1nF/400V  
 C40 - C55

STÜCKLISTE - PARTS LIST

KONDENSATOREN / CAPACITORS

C 60...C63            1 nF Keram.  
 Alle Steckstifte am Modul sind mit 1 nF Keram abgeblockt  
 (All pins at module board are rf-grounded by 1nF ceram.)

WIDERSTÄNDE / RESISTORS

P 8                    1 KOhm PIHER  
 P 9                    100 KOhm Potentiometer (Frontplatte)

HF-DROSSELN / RF-CHOKES

Dr 7...9            VK 200 ferrite

DIODEN / DIODES

D 31...33            1 N 4007

RELAIS / RELAYS

Siehe Stückliste DC-Teil ( See parts list DC-section )

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WARRANTY REGULATIONS

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Every DRESSLER-power-amplifier is equipped with electronic and mechanical components of first choice.

Every power amplifier has got a burn-in-procedure and a final check to make sure a trouble free operation.

Nevertheless an electronic component can fail - also at all carefully selection and handling. In that case please contact your dealer or national DRESSLER-agent.

The EIMAC valve is covered by special EIMAC-warranty regulations. EIMAC-valves are never covered by warranty of DRESSLER.

Freight and insurance on return of equipment must be payed by the owner. When the amplifier is modified, damaged by use of unskilled personal or physical damage - warranty becomes extinct.

Warranty is one year from date of purchase.

After purchase of the equipment please fill out the DRESSLER-warranty-card and return it to the factory.

Yours sincerely ,

**dressler**  
hochfrequenztechnik gmbh

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P.O. BOX 1327  
Tel.: 02402 - 5525  
TLX.: 832287 hadr d



PC-Board D 200 S

upper side  
components

