



## Yacht Boy 220 STUDIO/INE YB 225



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Bei Eingriffen Schutzmaßnahmen für MOS-Bauteile beachten!

Das Gerät muß auch nach der Reparatur den Sicherheitsbestimmungen nach DIN/IEC 65 VDE 0860 entsprechen.

### Inhaltsverzeichnis

Inhaltsverzeichnis	Seite
Sicherheitsvorschriften	2-5
Behandlung von MOS - Bauteilen	5-6
Ausbauhinweise	7-9
Abgleich	10-12
Druckplatten	13-18
Blockschaltbild Yacht Boy 220	19-20
Schaltbild Yacht Boy 220	21-22
Blockschaltbild YB 225	23-24
Schaltbild YB 225	25-26

ⓖB

N.B. When carrying out repairs, observe MOS precautions!

After the unit has been repaired, it should still meet the DIN/IEC 65 VDE 0860 safety requirements.

### Contents

Contents	Page
Safety requirements	2-5
Handling of MOS Chip Components	5-6
Disassembly Instructions	7-9
Alignment	10-12
Printed Circuit Boards	13-18
Block Diagram Yacht Boy 220	19-20
Connection Diagram Yacht Boy 220	21-22
Block Diagram YB 225	23-24
Connection Diagram YB 225	25-26

# Sicherheitsvorschriften / Safety requirements / Prescrizioni de sicurezza / Prescriptions de sécurité / Prescripciones de seguridad

**D** **Achtung:** Bei Eingriffen ins Gerät sind die Sicherheitsvorschriften nach VDE 701 (reparaturbezogen) bzw. VDE 0860 / IEC 65 (gerätebezogen) zu beachten!

**!** Bauteile nach IEC- bzw. VDE-Richtlinien! Im Ersatzfall nur Teile mit gleicher Spezifikation verwenden!  
**MOS - Vorschriften beim Umgang mit MOS - Bauteilen beachten!**

**GB** **Attention:** Please observe the applicable safety requirements according to VDE 701 (concerning repairs) and VDE 0860 / IEC 65 (concerning type of product)!

**!** Components to IEC or VDE guidelines! Only use components with the same specifications for replacement!  
Observe **MOS** components handling instructions when servicing!

**I** **Attenzione:** Osservare le corrispondenti prescrizioni di sicurezza VDE 701 (concernente servizio) e VDE 0860 / IEC 65 (concernente il tipo di prodotto)!


**!** Componenti secondo le norme VDE risp. te IEC! In caso di sostituzione impiegare solo componenti con le stesse caratteristiche.

Osservare le relative prescrizioni durante, lavori con componenti **MOS**!

**F** **Attention:** Priere d'observer les prescriptions de securite VDE 701 (concernant les reparations) et VDE 0860 / IEC 65 (concernant le type de produit)!

**D**

## Sicherheitsbestimmungen

Nach Servicearbeiten ist bei Geräten der Schutzklasse II die Messung des Isolationswiderstandes und des Ableitstromes bei eingeschaltetem Gerät nach **VDE 0701 / Teil 200** bzw. der am Aufstellort geltenden Vorschrift, durchzuführen!  
Dieses Gerät entspricht der Schutzklasse II, erkennbar durch das Symbol .

### • Messen des Isolationswiderstandes nach VDE 0701.

Isolationsmesser ( $U_{\text{Test}} = 500 \text{ V}$ -) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem:

$$R_{\text{isol}} \geq 2 \text{ M} \text{ bei } U_{\text{Test}} = 500 \text{ V}$$

Meßzeit:  $\geq 1 \text{ s}$  (Fig. 1)

**Anmerkung:** Bei Geräten der Schutzklasse II kann durch Entladungswiderstände der Meßwert des Isolationswiderstandes konstruktionsbedingt  $< 2 \text{ M}$  sein. In diesen Fällen ist die Ableitstrommessung maßgebend.

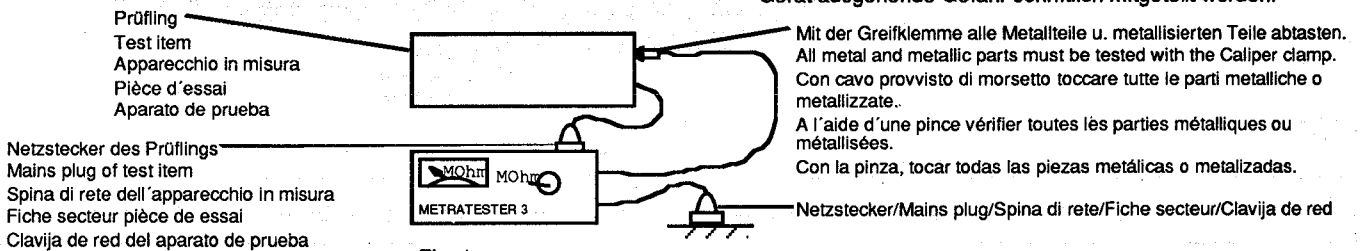


Fig. 1

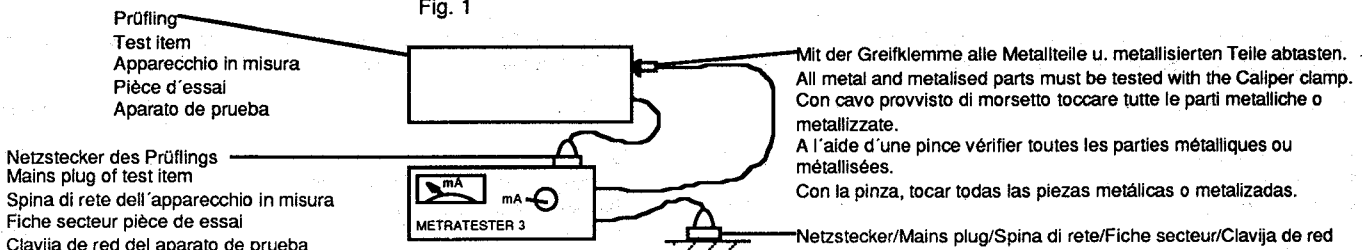


Fig. 2

**!** Composants répondant aux normes VDE ou IEC. Les remplacer uniquement par des composants ayant les memes spécifications.

Lors de la manipulation des circuits **MOS**, respecter les prescriptions **MOS**!

**E** **Atención:** Recomendamos las normas de seguridad VDE u otras normas equivalentes, por ejemplo: VDE 701 para reparaciones, VDE 0860 / IEC 65 para aparatos!

**!** Componentes que cumplen las normas VDE/IEC. En caso de sustitución, emplear componentes con idénticas especificaciones!

Durante la reparacion observar las normas sobre componentes **MOS**!

**USA** **Attention:** This set can only be operated from AC mains of 120 V/60 Hz. Also observe the information given on the rear of the set.

**!** CAUTION-for continued protection against risk of fire replace only with same type fuses!

**!** CAUTION: to reduce the risk of electric shock, do not remove cover (or back), no user-serviceable parts inside, refer servicing to qualified service personnel.

**!** Components to safety guidelines (IEC/U.L.)! Only use components with the same specifications for replacement!  
Observe by checking leakage-current or resistance measurement that the exposed parts are acceptably insulated from the supply circuit.

Observe **MOS** components handling instructions when servicing!

### • Messen des Ableitstromes nach VDE 0701.

Ableitstrommesser ( $U_{\text{Test}} = 220 \text{ V}$ ) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem:

$$I_{\text{Ableit}} \leq 1 \text{ mA} \text{ bei } U_{\text{Test}} = 220 \text{ V} \approx$$

Meßzeit  $\geq 1 \text{ s}$  (Fig. 2)

### • Wir empfehlen die Messungen mit dem METRATESTER 3 durchzuführen. (Meßgerät zur Prüfung elektrischer Geräte nach VDE 0701).

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• Ist die Sicherheit des Gerätes nicht gegeben, weil  
- eine Instandsetzung unmöglich ist  
- oder der Wunsch des Benützers besteht, die Instandsetzung nicht durchführen zu lassen, so muß dem Betreiber die vom Gerät ausgehende Gefahr schriftlich mitgeteilt werden.

### Empfehlungen für den Servicefall

- Nur Original - Ersatzteile verwenden.  
Bei Bauteilen oder Baugruppen mit der Sicherheitskennzeichnung  $\Delta$  sind Original - Ersatzteile zwingend notwendig.
- Auf Sollwert der Sicherungen achten.
- Zur Sicherheit beitragende Teile des Gerätes dürfen weder beschädigt noch offensichtlich ungeeignet sein.
- Dies gilt besonders für Isolierungen und Isolierteile.

- Netzleitungen und Anschlußleitungen sind auf äußere Mängel vor dem Anschluß zu prüfen. Isolation prüfen!
- Die Funktionssicherheit der Zugentlastung und von Biegeschutz-Tüllen ist zu prüfen.
- Thermisch belastete Lötstellen absaugen und neu löten.
- Belüftungen frei lassen.

**GB**

### Safety Standard Compliance

After service work on a product conforming to the Safety Class II, the insulating resistance and the leakage current with the product switch on must be checked according to VDE 0701 or to the specification valid at the installation location!

This product conforms to the Safety Class II, as identified by the symbol  $\square$ .

#### ● Measurement of the Insulation Resistance to VDE 0701,

Connect an Insulation Meter ( $U_{\text{Test}} = 500 \text{ V}$ -) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, decorative parts, etc.) made from metal or metal alloy. The product is fault free if:

$$R_{\text{isol}} \geq 2 \text{ M}\Omega \text{ at } U_{\text{Test}} = 500 \text{ V-}$$

Measuring time:  $\geq 1 \text{ s}$ , (Fig. 1)

**Comment:** On product conforming to the Safety class II the Insulation Resistance can be  $< 2 \text{ M}\Omega$ , dependent constructively on discharge resistors. In this cases, the check of the leakage current is significant.

#### ● Measurement of the Leakage Current to VDE 0701.

Connect the Leakage Current Meter ( $U_{\text{Test}} = 220 \text{ V}$ ) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, screws, etc.) mad from metal or metal alloy. The product is fault free if:

$$I_{\text{Leak}} 1 \text{ mA at } U_{\text{Test}} = 220 \text{ V}$$

Measuring time:  $\geq 1 \text{ s}$ , (Fig. 2)

- We recommend that the measurements are carried out using the **METRATESTER 3**. (Test equipment for checking electrical products to VDE 0701).

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- If the safety of the product is not proved, because
  - a repair and restoration is impossible
  - or the request of the user is that the restoration is not to be carried out, the operator of the product must be warned of the danger by a written warning.

#### Recommendation for service repairs

- Use only original spare parts.  
With components or assemblies accompanied with the Safety Symbol  $\Delta$  only original-spare parts are strictly to be used.
- Use only original fuse value.
- Safety compliance, parts of the product must not be visually damaged or unsuitable. This is valid especially for insulators and insulating parts.
- Mains leads and connecting leads should be checked for external damage before connection. Check the insulation!
- The functional safety of the tension relief and bending protection bushes are to be checked:
- Thermally loaded solder pads are to be suck off and re-soldered.
- Ensure that the ventilation slots are not obstructed.

**F**

### Prescriptions de securite

Suite aux travaux de maintenance sur les appareils de la classe II, il convient de mesurer la résistance d'isolement et le courant de fuite sur l'appareil en état de marche, conformément à la norme VDE 0701 § 200, ou selon les prescriptions en vigueur sur le lieu de fonctionnement de l'appareil!

Cet appareil est conforme aux prescriptions de sécurité classe II, signalée par le symbole  $\square$ .

#### ● Mesure de la résistance d'isolement selon VDE 0701

Brancher un appareil de mesure d'isolement ( $U_{\text{test}} = 500 \text{ V}$ -) simultanément sur les deux pôles secteur et entre toutes les parties métalliques ou métallisées accessibles de l'appareil (antenne, embases, touches, enjoliveurs, vis, etc.).

Le fonctionnement est correct lorsque:

$$R_{\text{isol}} 2 \text{ M pour une } U_{\text{test}} : 500 \text{ V-}$$

Durée de la mesure:  $\geq 1 \text{ s}$

**Observations:** L'isolement des appareils de la classe II, de part leur conception (résistance de décharge), peut être inférieur à  $< 2 \text{ M}$ , (Fig. 1).

#### ● Mesure du courant de fuite selon VDE 0701

Brancher un ampèremètre du courant de fuite ( $U_{\text{test}} = 220 \text{ V}$ ) simultanément sur les deux pôles du secteur et entre toutes les parties métalliques ou métallisée accessibles de l'appareil (antenne, embases, touches, enjoliveurs, vis, etc.). Le fonctionnement est correct lorsque (Fig. 2):

$$I_{\text{fuite}} 1 \text{ mA pour } U_{\text{test}} : 220 \text{ V}$$

Durée de la mesure  $\geq 1 \text{ s}$ .

- Pour ces mesures, nous préconisons l'utilisation du **METRATESTER 3** (instrument de mesure pour le contrôle d'appareils électriques conformes à la norme VDE 0701).

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- Dans le cas où la sécurité de l'appareil n'est pas assurée pour les raisons suivantes:
  - la remise en état est impossible
  - l'utilisateur ne souhaite pas la remise en état de l'appareil, l'utilisateur doit être informé par écrit du danger que représente l'utilisation de l'appareil.


#### Recommandations pour la maintenance

- Utiliser exclusivement des pièces de rechange d'origine. Les composants et ensembles de composants signalés par le symbole  $\Delta$  doivent être impérativement remplacés par des pièces d'origine.
- Respecter la valeur nominale des fusibles.
- Veiller au bon état et la conformité des pièces contribuant à la sécurité de fonctionnement de l'appareil. Ceci s'applique particulièrement aux isolements et pièces isolantes.
- Vérifier le bon état extérieur des câbles secteur et des câbles de raccordement au point de vue isolement avant la mise sous tension.
- Vérifier le bon état des protections de gaine.
- Nettoyer les soudures avant de les renouveler.
- Dégager les voies d'aération.

# I

## Norme di sicurezza

Successivamente ai lavori di riparazione, negli apparecchi della classe di protezione II occorre effettuare la misura della resistenza di isolamento e della corrente di dispersione quando l'apparecchio è acceso, secondo le norme VDE 0701 / parte 200 e rispettivamente le norme locali!

Questo apparecchio corrisponde alla classe di protezione II ed è riconoscibile dal simbolo .

### ● Misura della resistenza di isolamento secondo VDE 0701

Applicare il misuratore di isolamento (tens. prova = 500 V-) contemporaneamente ai due poli di rete e tra tutte le parti del mobile e delle funzioni (antenna, prese, tasti, mascherine, viti ecc.) in metallo o in lega metallica. L'apparecchio non presenta difetti quando:

$$R_{\text{isol}} \geq 2 \text{ M} \text{ con tens. prova} = 500 \text{ V-}$$

Tempo di misura:  $\geq 1 \text{ s}$  (Fig. 1).

**Nota:** Negli apparecchi della classe II, che per motivi costruttivi dispongono di resistenze di dispersione, il valore di misura della resistenza di isolamento può essere inferiore a  $< 2 \text{ M}\Omega$ .

In questi casi è determinante la misura della corrente di dispersione.

### ● Misura della corrente di dispersione secondo VDE 0701

Applicare il misuratore di isolamento (tens. prova = 220 V) contemporaneamente ai due poli di rete e tra tutte le parti del mobile e delle funzioni ( antenna, prese, tasti, mascherine, viti ecc.) in metallo o in lega metallica. L'apparecchio non presenta difetti quando:

$$I_{\text{disp.}} \leq 1 \text{ mA con tens. prova} = 220 \text{ V}\approx$$


Tempo di misura :  $\geq 1 \text{ s}$  (Fig. 2)

- Si raccomanda di effettuare le misure con lo strumento **METRATESTER 3** (strumento di misura per il controllo di apparecchi elettrici secondo VDE 0701).

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- Se la sicurezza dell'apparecchio non è raggiunta, perché
  - una riparazione non è possibile
  - oppure è desiderio del cliente che una riparazione non avvenga in questi casi si deve comunicare per iscritto all'utilizzatore la pericolosità dell'apparecchio riguardo il suo isolamento.


## Raccomandazione per il servizio assistenza

- Impiegare solo componenti originali:
  - I componenti o i gruppi di componenti contraddistinti dall'indicazione  devono assolutamente venir sostituiti con parti originali.
- Osservare il valore nominale dei fusibili.
- I componenti che concorrono alla sicurezza dell'apparecchio non possono essere né danneggiati né risultare visibilmente inadatti. Questo vale soprattutto per isolamenti e parti isolate.
- I cavi di rete e di collegamento vanno controllati prima dell'utilizzo affinché non presentino imperfezioni esteriori. Controllare l'isolamento.
- E' necessario controllare la sicurezza dei fermacavi e delle guaine flessibili.
- Saldature caricate termicam. vanno rifatte.
- Lasciare libere le fessure di areazione.

# E

## DISPOSICIONES PARA LA SEGURIDAD

Después de operaciones de servicio en aparatos de la clase de protección II, se llevará a cabo la medida de la resistencia de aislamiento y de la corriente derivada, con el aparato conectado, de acuerdo con VDE 0701 o de las disposiciones vigentes en el lugar de instalación.

Este aparato corresponde a la clase de protección II, reconocible por el símbolo .

### ● Medida de la resistencia de aislamiento según VDE 0701.

Aplicar el medidor de aislamiento ( $U_{\text{prueba}} = 500 \text{ V-}$ ), simultáneamente, a los dos polos de red y entre todas las partes del mueble o de funciones (antena, conectores, teclas, tornillos, etc.) de metal o aleaciones metálicas. El aparato estará libre de defectos con:

$$R_{\text{aisl}} \geq 2 \text{ M con } U_{\text{prueba}} = 500 \text{ V-}$$

Tiempo de medida  $\geq 1 \text{ seg.}$

**Observación:** En aparatos de la clase de protección II, condicionado por la construcción y por resistencias de descarga, el valor de medida de la resistencia de aislamiento puede ser superior a  $< 2 \text{ M}\Omega$ .

En este caso es decisiva la medida de la corriente derivada (Fig. 1).

### ● Medida de la corriente derivada de acuerdo con VDE 0701.

Aplicar el medidor de corriente derivada ( $U_{\text{prueba}} = 220 \text{ V}$ ) simultáneamente a los dos polos de red y entre todas las partes del mueble o de funciones (antena, conectores, teclas, tornillos, etc.) de metal o aleaciones metálicas. El aparato estará libre de defectos con (Fig.2):

$$I_{\text{deriv}} \leq 1 \text{ mA con } U_{\text{prueba}} = 220 \text{ V.}$$


Tiempo de medida :  $\geq 1 \text{ seg.}$

- Aconsejamos llevar a cabo las medidas con el **METRATESTER 3** (Instrumento de medida para la comprobación de aparatos eléctricos según VDE 0701).

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- Si no se cumple la seguridad del aparato, porque
  - la puesta en orden es imposible, o
  - existe el deseo del usuario de no realizarla, se ha de comunicar a quien lo haga funcionar, por escrito, del peligro dimanante del aparato.

## Recomendaciones para caso de servicio

- Emplear sólo componentes originales.
  - Con componentes o grupos constructivos con el indicativo de seguridad  son de obligada necesidad piezas de repuesto originales.
- Las partes del aparato que contribuyan a la seguridad del mismo no deben estar deterioradas ni ser manifiestamente inadecuadas.
- Esto es especialmente válido para aislamientos o piezas aislantes.
- Los cables de red y de conexión se comprobarán, antes de conectarlos, en cuanto a defectos externos. Comprobar el aislamiento.
- Se ha de comprobar la función de seguridad de la compensación de tiro o de los manguitos de protección contra doblamientos.
- Repasar los puntos de soldadura sometidos a carga térmica.
- Mantener libres los canales aireación.



**Safety Instructions**



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage", within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangles is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions which you should be particularly aware of.**

- Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
- Retain Instructions - The safety and operating instructions should be retained for future reference.
- Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.
- Follow Instructions - All operating and use instructions should be followed.
- Water and Moisture - The appliance should not be used near water-for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
- Wall or Ceiling Mounting - The appliance should be mounted to wall or ceiling only as recommended by the manufacturer.
- Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built - in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

- Power Sources - The appliance should be connected to a power supply only of the type given above or as marked on the appliance.
- Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
- Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
- Power Lines - An outdoor antenna should be located
  - x1 away from power lines.
  - x2 Outdoor Antenna Grounding - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
- Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
- Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- Damage Requiring Service - The appliance should be serviced by qualified service personnel when: The power-supply cord or the plug has been damaged; or objects have fallen, or liquid has been spilled into the appliance; or the appliance has been exposed to rain; or the appliance does not appear to operate normally or exhibits a marked change in performance; or the appliance has been dropped, or the enclosure damaged; or the batteries have been damaged.
- Servicing - the user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.
  - Points x1 and x2 apply only to receivers or tuners.

**D CHIP Technik**

**Aus- und Einlöten von CHIP-Bauteilen**

- Verwenden Sie nur einen NiedervoltlötKolben mit Temperaturregelung.
- Die Löttemperatur sollte ca. 240 °C betragen (max. 300 °C).
- Halten Sie die Lötzeit so kurz wie möglich.
- Belassen Sie CHIP-Bauteile bis zur Bearbeitung in der Originalverpackung. Damit wird die Oxidation der Stirnkontakte vermieden.
- Berühren Sie CHIP- Bauteile nicht mit der bloßen Hand.

**Auslöten von CHIP-Bauteilen**

1. Schritt: CHIP- Lötstelle mit Sauglitze absaugen (Fig. 1).
2. Schritt: CHIP-Enden, bzw. das komplette CHIP-Bauteil erwärmen. CHIP von der Klebung ohne Kraftaufwand abdrehen, damit unter dem CHIP liegende Leiterbahnen nicht abgerissen werden (Fig. 2).

**Achtung!** Ausgelötetes CHIP nicht wiederverwenden!  
Die leitende Schicht kann ausgebrochen sein.

**Einlöten von CHIP-Bauteilen**

3. Schritt: Lötspunkt von Lötückständen säubern. Lötperle anbringen (Fig. 3).
4. Schritt: CHIP an der Lötstelle ansetzen, zentrieren und anlöten (Fig. 4).
5. Schritt: Freie Seite löten. Nach dem Erkalten die erste Lötstelle nochmals nachlöten (Fig. 5).

**GB U.S. & Canada CHIP Technology**

**Soldering and unsoldering of CHIP components**

- Use only low-voltage soldering irons with temperature control.
- Permissible soldering temperatures are approx. 240 °C up to max. 300 °C.
- Keep the soldering period as short as possible.
- Keep the CHIP components in their original packages until they are used to avoid oxidation of the end contacts.
- Do not touch CHIP components with bare hands.

**Unsoldering of CHIP components**

1. step: Clean the CHIP soldering point with a solder wick (Fig. 1).
2. step: Warm up the ends of the CHIP or the whole CHIP component and remove the CHIP from the adhesive by turning it without application of force so that the tracks beneath the CHIP do not break (Fig. 2).

**Attention!** Do not use unsoldered CHIPS any more!  
The conductive layer may be broken.

**Soldering of CHIP components**

3. step: Remove possible residues from the soldering point. Then apply a solder bead (Fig. 3).
4. step: Put the CHIP onto the soldering point, then center and fix it (Fig. 4).
5. step: Solder the free end of the CHIP and resolder the first soldering point after it has cooled (Fig. 5).

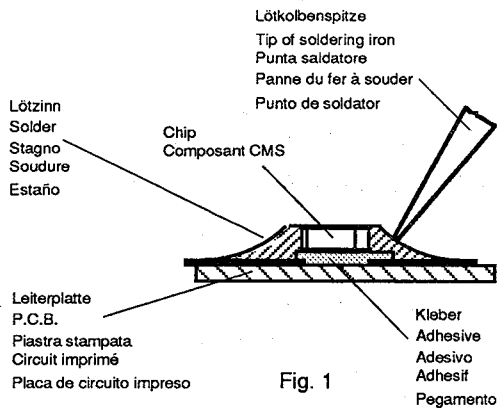


Fig. 1

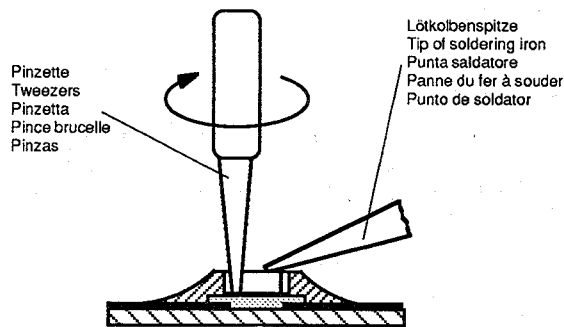


Fig. 2

## F Technologie CMS

### Soudure des composants CMS

- Utiliser exclusivement un fer à souder à basse tension et réglage thermique
- La température de soudure doit être de 240 °C environ (max. 300 °C)
- L'opération doit être très brève.
- Conserver les composants CMS dans leur emballage d'origine jusqu'au moment de leur utilisation, ceci pour éviter l'oxydation des contacts externes.
- Ne pas toucher les composants CMS à la main nue.

### Dessoudage des composants CMS

1. Aspirer la soudure du composant CMS à la l'aide de la tresse à souder (Fig. 1).
2. Chauffer légèrement les contacts externes du composant CMS ou le composant lui-même. Retirer ce dernier avec précaution en le tournant afin d'éviter un arrachement des circuits imprimés situés sous le composant (Fig. 2).

**Attention! Ne pas réutiliser les composants CMS, la face conductrice pouvant être endommagée.**

### Soudure des composants CMS

3. Aspirer les restes de soudure sur le circuit. Poser une pointe de soudure (Fig. 3).
4. Poser le composant CMS sur cette pointe de soudure, centrer et souder. Maintenir le composant CMS à l'aide d'une pince brucelle (Fig. 4).
5. Effectuer la même opération pour l'autre coté. Terminer la première soudure (Fig. 5).

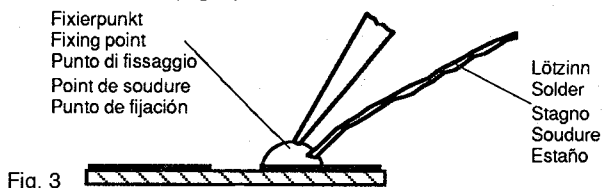


Fig. 3

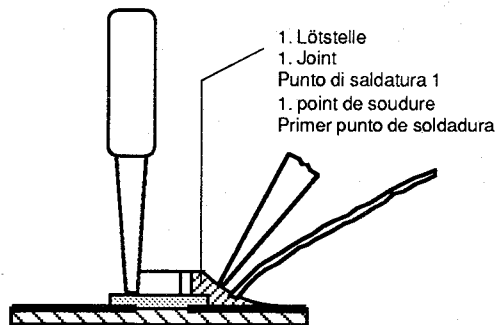


Fig. 4

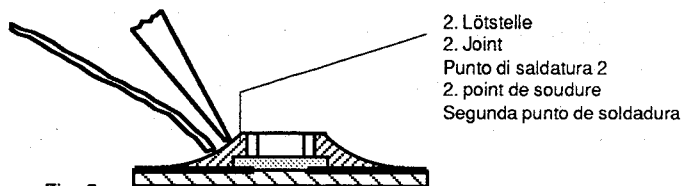


Fig. 5

## I Tecnica CHIP

### Saldatura e dissaldatura di componenti MOS

- Impiegare un saldatore a basso voltaggio con regolazione della temperatura.
- Temperatura del saldatore: ca. 240 °C (valore massimo 300°C).
- Il tempo di saldatura deve essere il più breve possibile.
- Il componente CHIP deve rimanere nell'imballaggio originale fino al momento del suo impiego per evitare che le superfici di contatto si ossidino.
- Non toccare i componenti CHIP con mani nude.

### Dissaldatura di un CHIP

1. Aspirare i punti di saldatura del CHIP con una calza dissaldante (Fig. 1).
2. Riscaldare le superfici di contatto del CHIP risp. te tutto il CHIP e staccarlo con cautela. Attenzione a non esercitare forza per non danneggiare le piste sottostanti (Fig. 2).

**Attenzione! Non impiegare più il CHIP dissaldato, perchè il corpo elettrico può presentare delle rotture.**

### Saldatura di un CHIP

3. Pulire il punto dai residui di saldatura. Applicare una goccia di stagno (Fig. 3).
4. Appoggiare il CHIP sul punto di saldatura, centrarlo e quindi saldarlo (Fig. 4).
5. Saldare la superfici di contatto libera e, dopo che questa si è raffreddata, saldare nuovamente la superfici opposta (Fig. 5).

## E Técnica de CHIP's

### Soldaje y desoldaje de CHIP's

- Emplear sólo un soldador de bajo voltaje con regulación de temperatura.
- La temperatura del soldador debe ser de aprox. 240 °C (máx. 300 °C).
- El tiempo de soldadura debe de ser lo más corto posible.
- Dejar los componentes CHIP hasta su montaje en el embalaje original. Con ello se evita la oxidación de los contactos frontales.
- No tocar con las manos los componentes CHIP.

### Desoldaje de un CHIP

- Primer paso: Aspirar el estaño del punto de soldadura con un aspirador de los tipos de pera o de resorte (Fig. 1).
- Segundo paso: Calentar los extremos o todo el CHIP y girarlo con las pinzas. No hacer fuerza para que la placa de circuito impreso no resulte dañada. Cuidar de que las pistas situadas debajo del CHIP no se suelten de la placa, ya que éstas también están pegadas (Fig. 2).

**Ciudadano! No volver a utilizar el CHIP desoldado. La capa eléctrica puede estar interrumpida.**

### Soldadura de CHIP's

- Tercer paso: Limpiar el punto de soldadura de residuos de la soldadura anterior. Poner una gota de estaño (Fig. 3).
- Cuarto paso: Colocar el CHIP sobre la gota estaño, centrarlo y soldarlo (Fig. 4).
- Quinto paso: Soldar la parte libre y, después enfriarse, soldar también la parte opuesta (Fig. 5).

## Ausbauhinweise

### Rückwand abnehmen

- Schraube **a** herausschrauben.
- Mit Schraubendreher bei Nase **b** Rückwand abhebeln.

### Vorderteil abnehmen

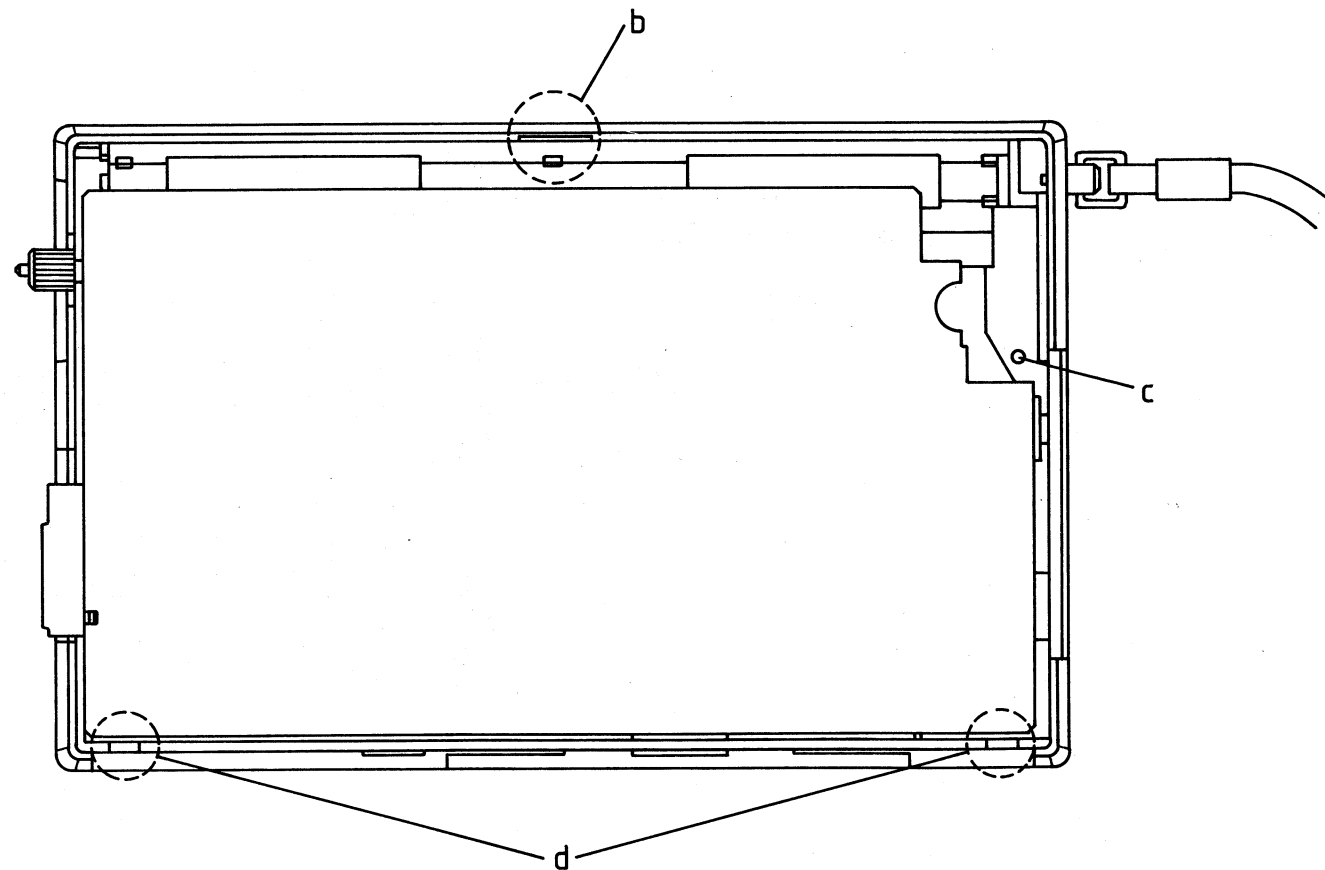
- Schraube **c** herausschrauben.
- 2 Nasen **d** mit Schraubendreher ausrasten.

### Bedienplatte und Skala ausbauen

- Vorderteil abnehmen.
- 5 Rastnasen **e** ausrasten.
- Skalenzeiger nach oben klappen.
- Mit Schraubendreher Bedienplatte und Skala aus den Führungen heben und vorsichtig hochklappen.
- Steckverbindungen lösen.

### Hauptplatte ausbauen

- Die weiße und orange Leitung ablöten.
- LED-Platte **k** ausrasten.
- Schraube **f** herausschrauben.
- 2 Schrauben **g** herausschrauben.
- Zahnräder **i** anheben.
- 3 Rastnasen **h** ausrasten.
- Leiterplatte vorsichtig hochklappen. **Achtung! Anschlüsse der Ferritantenne nicht abreißen.**



## Disassembly Instructions

### Removing of the rear panel

- Unscrew screw **a**.
- Lift off the rear panel with a screw driver at the nose **b**.

### Removing of the front panel

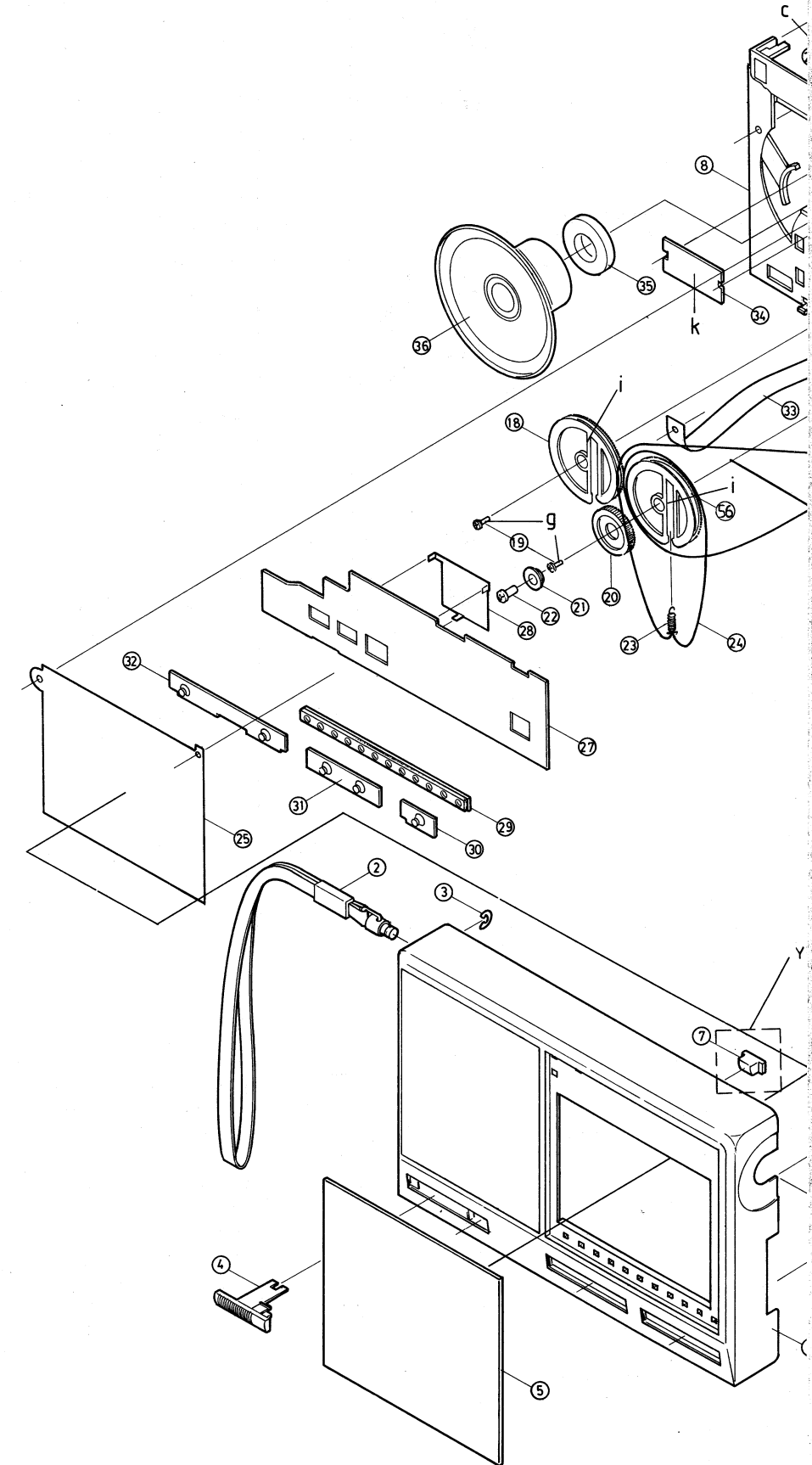
- Unscrew screw **c**.
- Disengage the two latches **d** with a screw driver.

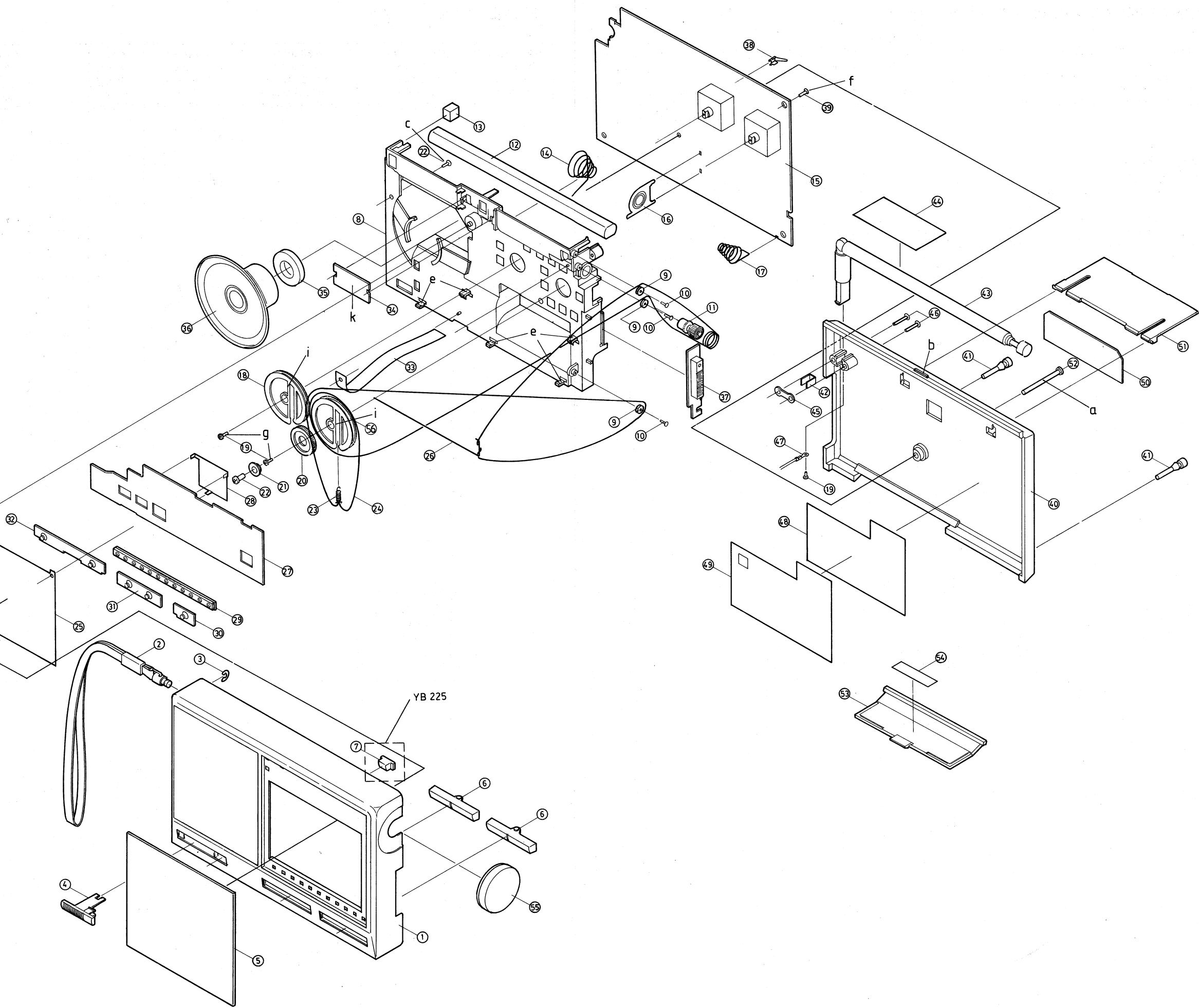
### Removing of the keyboard circuit board and the scale

- Remove the front panel.
- Disengage the 5 latches **e**.
- Unfold the scale pointer.
- Lift off the keyboard circuit board and the scale from the guide pins with a screw driver and unfold carefully.
- Disconnect the plug in connections.

### Removing of the Main Circuit Board

- Unsolder the white and the orange wire.
- Disengage the LED board **k**.
- Unscrew screw **f**.
- Unscrew the two screws **g**.
- Lift off the gears **i**.
- Disengage the three latches **h**.
- Unfold the Main Circuit Board carefully. **Attention! Don't tear off the connections of the wavemagnet.**





# Abgleich / Alignment / Alignement / Taratura / Ajuste

## Vorbereitung

- Bedienplatte und Skala aufklappen. (Siehe Ausbauhinweise)

## Abgleich der Filter, die hinter den Zahnrädern i angeordnet sind

- 2 Schrauben **g** herausschrauben.
- Mit "Tuning"-Knopf Abgleichfrequenz einstellen und dann die Zahnräder abnehmen.

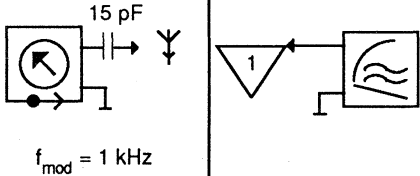
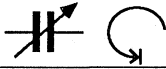
## Preparation

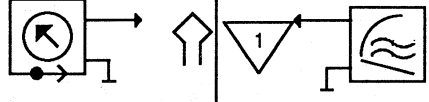
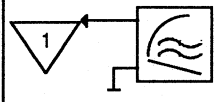


















- Unfold Keyboard circuit board and the scale. (Look for the disassembly instructions)








## Alignment of the filters which are arranged behind the gears **i**.

- Unscrew two screws **g**.
- Tune the alignment frequency by the tuning knob and then take off the gears.

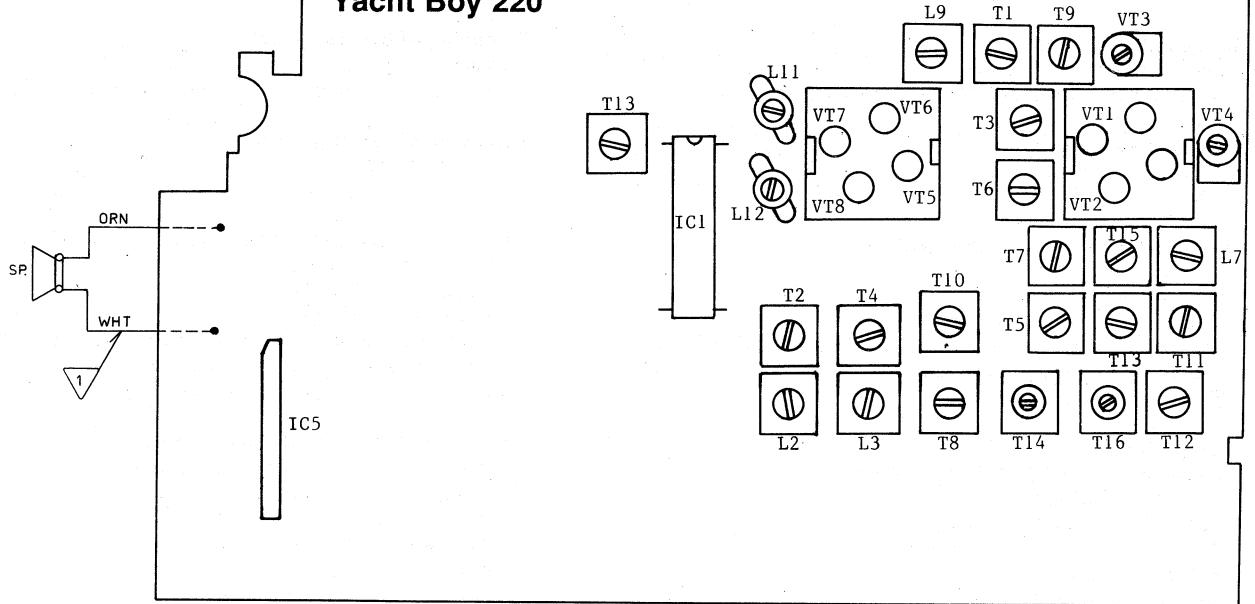
**D** **GB** **F** **I** **E**

<ul style="list-style-type: none"> <li>• Abgleich</li> <li>• Alignment</li> <li>• Alignement</li> <li>• Taratura</li> <li>• Ajuste</li> </ul>	<ul style="list-style-type: none"> <li>• Einspeisung</li> <li>• Feeding</li> <li>• Injection</li> <li>• Alimentatione</li> <li>• Aplicación de señal</li> </ul>	<ul style="list-style-type: none"> <li>• Meßpunkt</li> <li>• Testpoint</li> <li>• Point de mesure</li> <li>• Punto di misura</li> <li>• Punto de medida</li> </ul>	<ul style="list-style-type: none"> <li>• Hinweise</li> <li>• Notes</li> <li>• Observation</li> <li>• Note</li> <li>• Advertencias</li> </ul>	<ul style="list-style-type: none"> <li>• Band</li> <li>• Band</li> <li>• Bande</li> <li>• Gamma</li> <li>• Banda</li> </ul>	f	<ul style="list-style-type: none"> <li>• Abgleichpunkt</li> <li>• Alignment point</li> <li>• Point d'alignement</li> <li>• Punto di taratura</li> <li>• Punto de ajuste</li> </ul>	<ul style="list-style-type: none"> <li>• Einstellung</li> <li>• Adjustment</li> <li>• Réglage</li> <li>• Regolazione</li> <li>• Ajuste</li> </ul>
<ul style="list-style-type: none"> <li>• Oszillator und Vorkreis</li> <li>• Oscillator and r.f.circuit</li> <li>• Oscillateur et Circuits préliminaire</li> <li>• Oscillatore ed Circuito ingresso</li> <li>• Oscilador e Circuitos de antena</li> </ul>				SW1	3850 kHz	T2	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					3950 kHz	T1	
				SW2	5900 kHz	T4	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					6075 kHz	T3	
				SW3	7020 kHz	L2	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					7450 kHz	T5	
				SW4	9420 kHz	L3	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					9700 kHz	T6	
				SW5	11550 kHz	T8	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					11850 kHz	T7	
				SW6	13500 kHz	T10	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					13750 kHz	T9	
				SW7	15020 kHz	T12	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					15350 kHz	T11	
				SW8	17450 kHz	T14	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					17725 kHz	T13	
				SW9	21350 kHz	T16	<ul style="list-style-type: none"> <li>• Maximum</li> <li>• Maximum</li> <li>• Maximum</li> <li>• Massimo</li> <li>• Máximo</li> </ul>
					21650 kHz	T15	

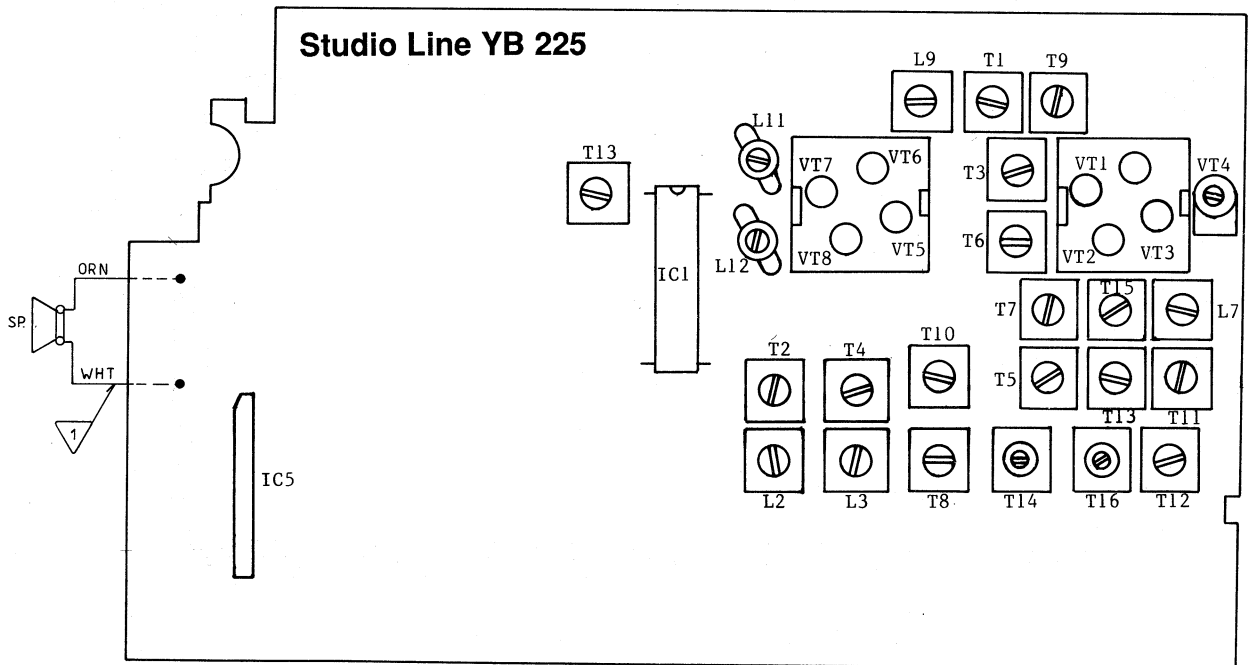
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<ul style="list-style-type: none"> <li>• Oszillator und Vorkreis</li> <li>• Oscillator and r.f.circuit</li> <li>• Oscillateur et Circuits préliminaire</li> <li>• Oscillatore ed Circuito ingresso</li> <li>• Oscilador e Circuitos de antena</li> </ul>	 <p><math>f_{mod} = 1 \text{ kHz}</math></p>			LW	135 kHz	L 7	max. 	
					295 kHz	VT 4	max. 	
					170 kHz	L 17	max. 	
					270 kHz	VT 3	max. 	
					MW	510 kHz	L 9	max. 
						1650 kHz	VT 6	max. 
			600 kHz	L 16		max. 		
			1400 kHz	VT 5		max. 		
			FM	87,5 MHz		L 12	max. 	
				108 MHz		VT 8	max. 	
				90 MHz	L 11	max. 		
				106 MHz	VT 7	max. 		
<ul style="list-style-type: none"> <li>• ZF</li> <li>• IF</li> <li>• FI</li> <li>• FI</li> <li>• FI</li> </ul>	<ul style="list-style-type: none"> <li>• Abgleich nach Rauschen</li> <li>• Alignment by noise</li> <li>• Réglage au maximum de bruit</li> <li>• Taratura in base al fruscio</li> <li>• Ajuste según el ruido</li> </ul>			MW		T 17	max.	

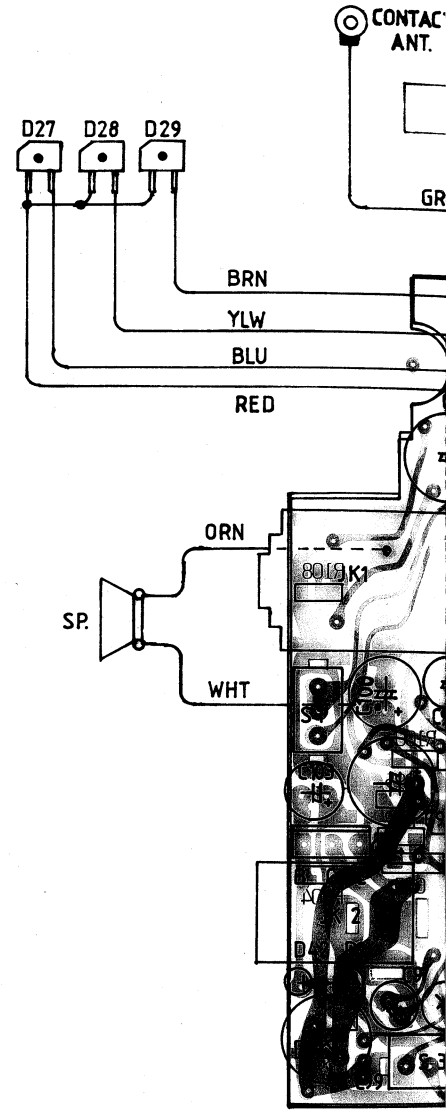
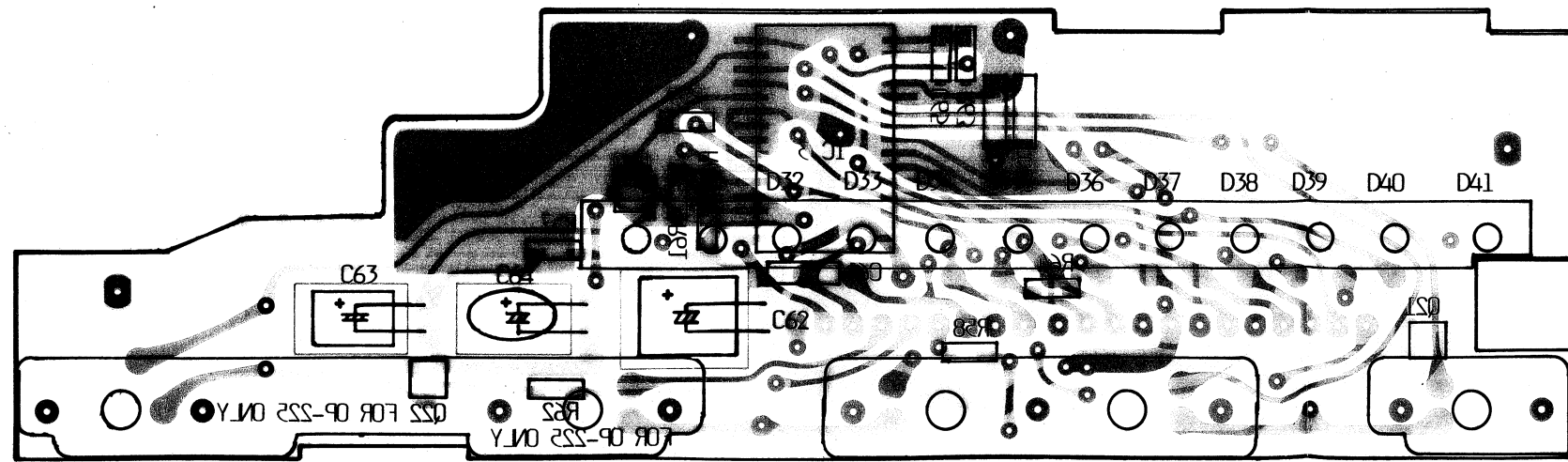
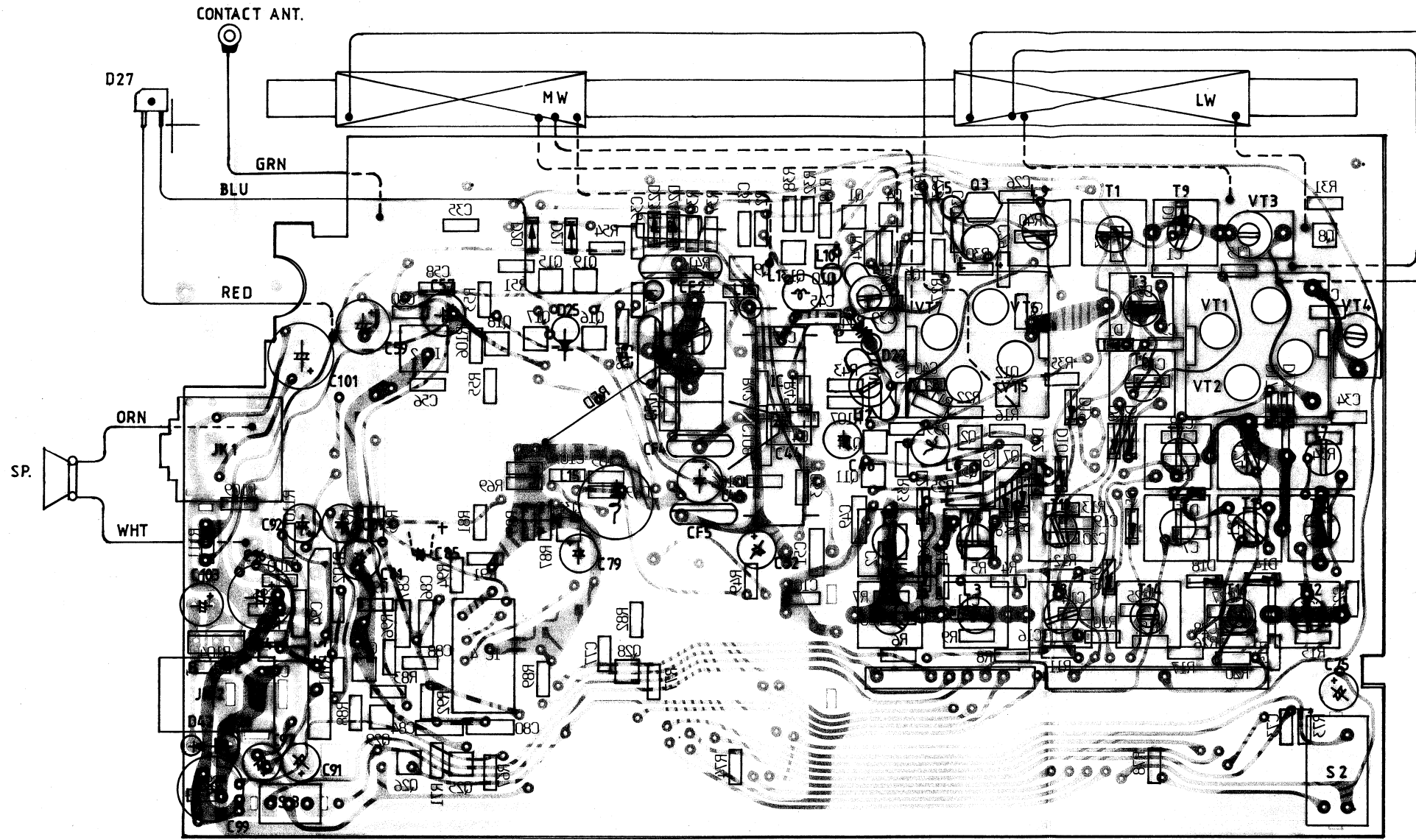
Zeichen- erklärung		Meßsender/Testgenerator Générateur/Generatore di misura Generador frecuencias		NF-Voltmeter/AF-Voltmeter Voltmètre BF/Voltmetro BF Voltmetro de BF
Legende		Antenne/Aerial Cadre/Antenna Antena		Rahmenantenne/Frame aerial Cadre/Antenna a telaio Antena de cuadro
Simbologia		"TUNING" nach rechts drehen Turn "TUNING" right Tourner "TUNING" vers la droite Ruotare "TUNING" verso destra Girar "TUNING" a la derecha		"TUNING" nach links drehen Turn "TUNING" left Tourner "TUNING" vers la gauche Ruotare "TUNING" verso sinistra Girar "TUNING" a la izquierda
Aclaración		Einstellung wiederholen/To repeat the adjustment Répéter le réglage/Ripetere la regolazione Repetir el ajuste		

# Yacht Boy 220

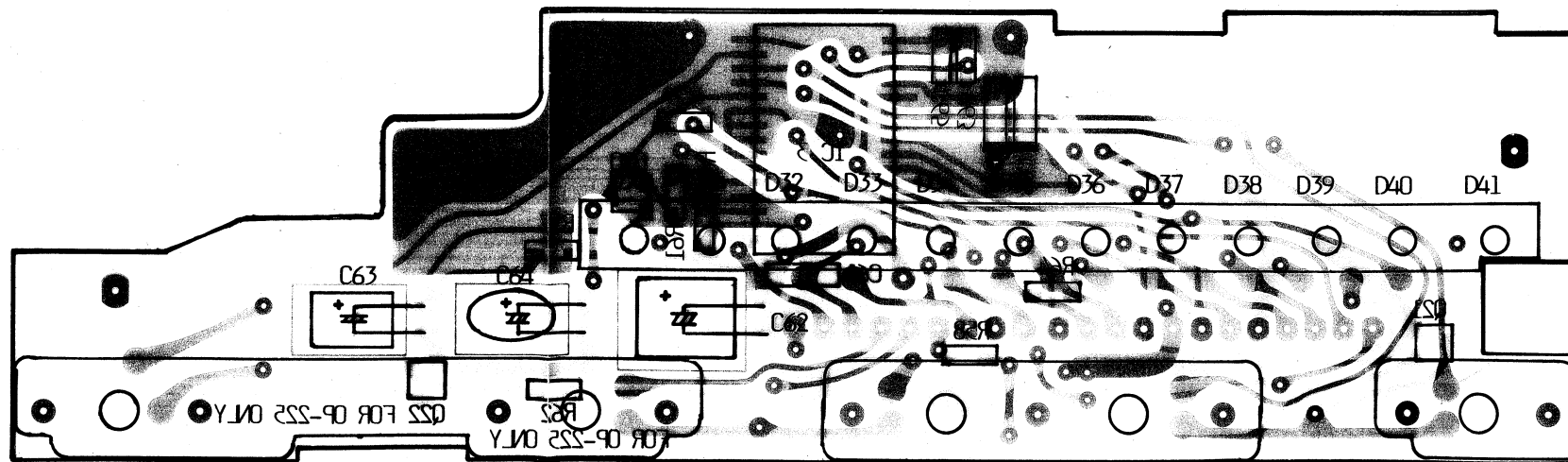
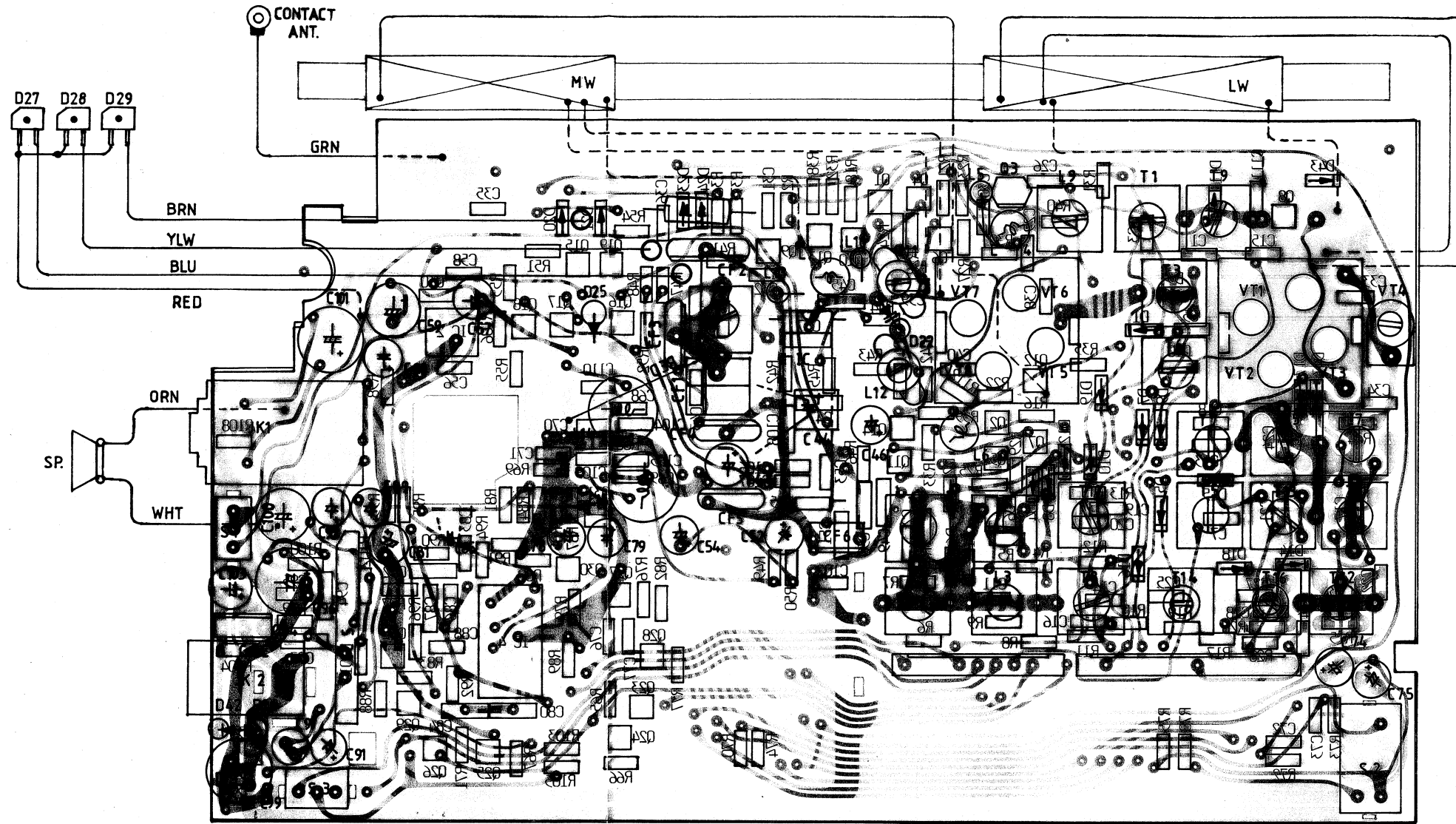


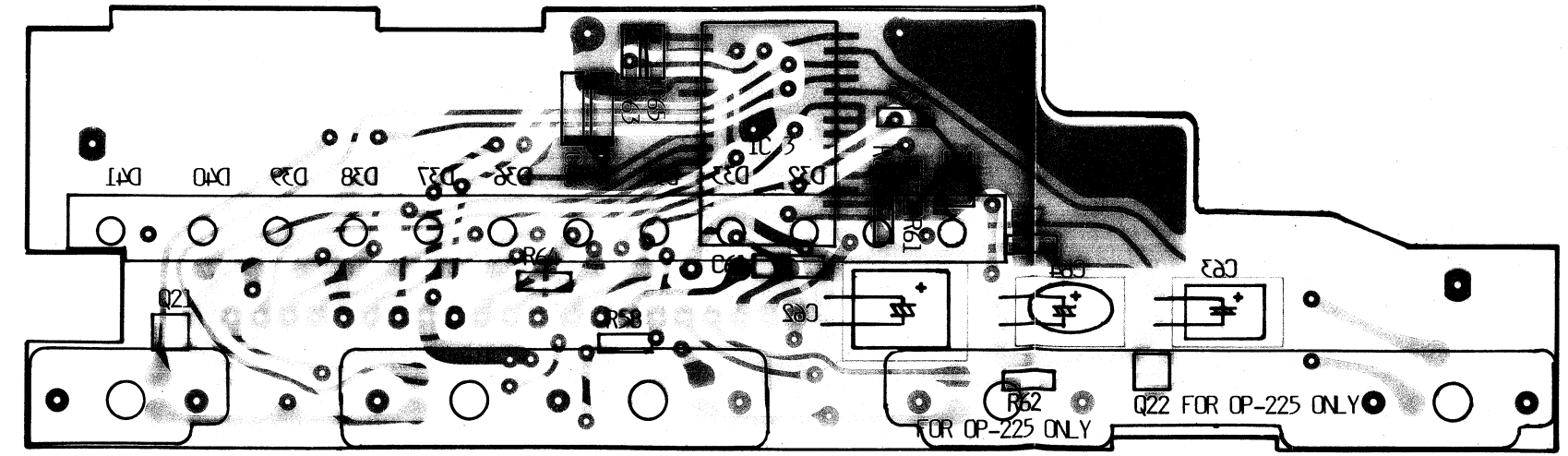
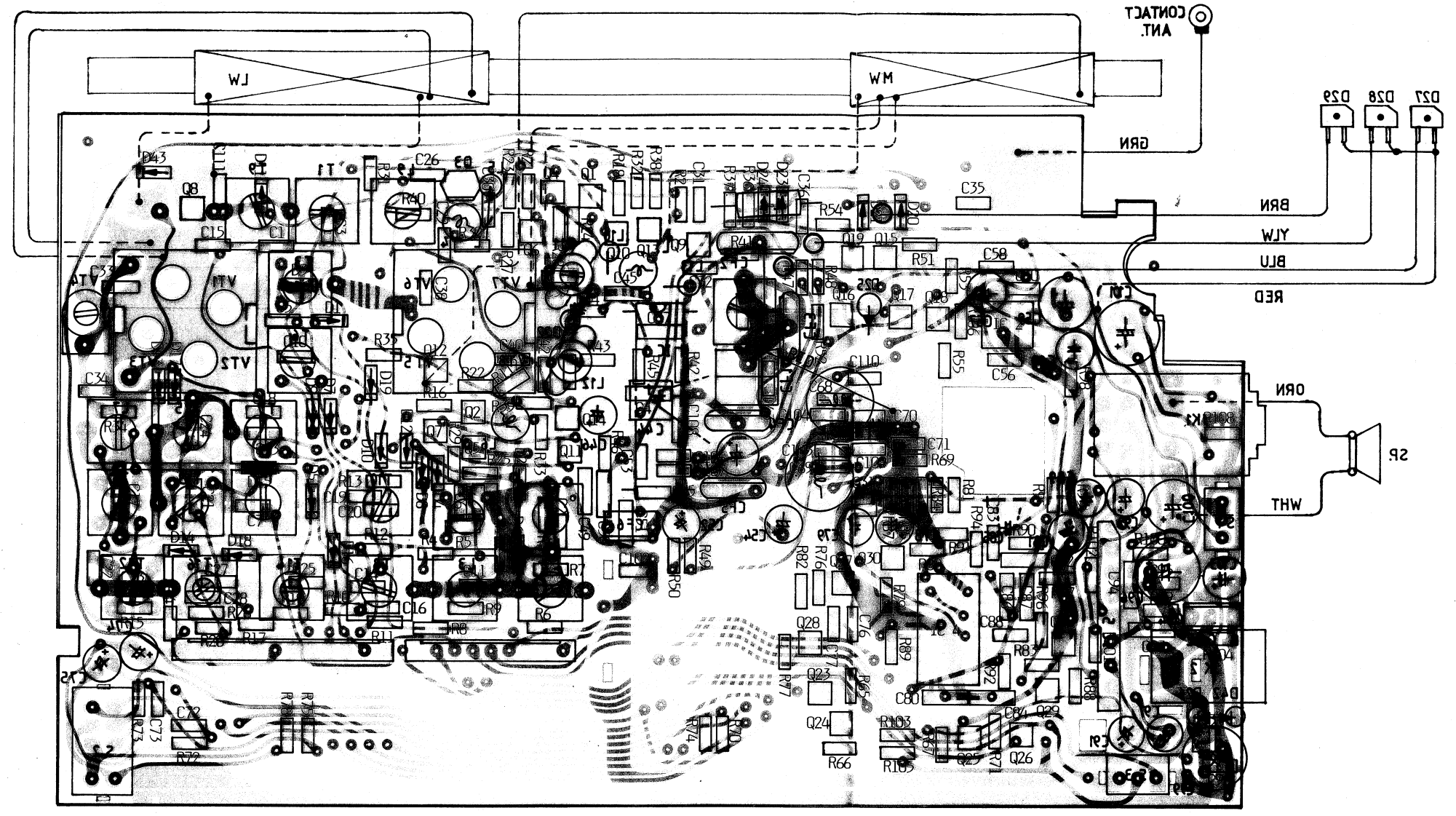
# Studio Line YB 225

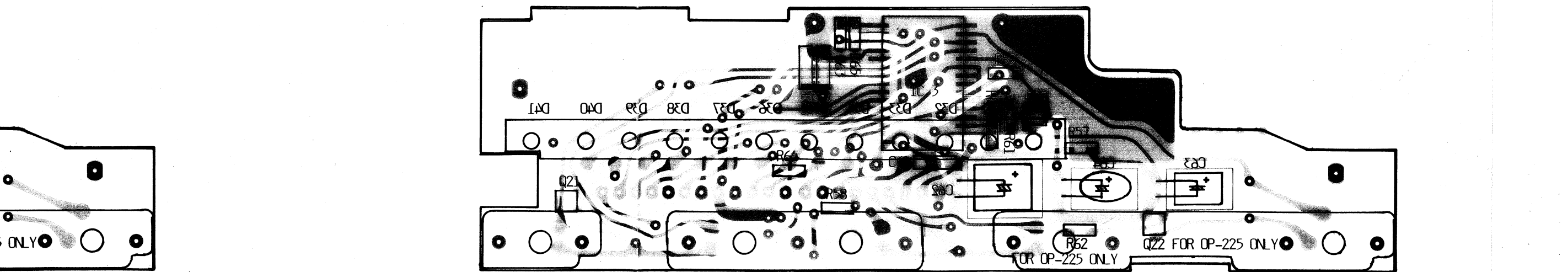
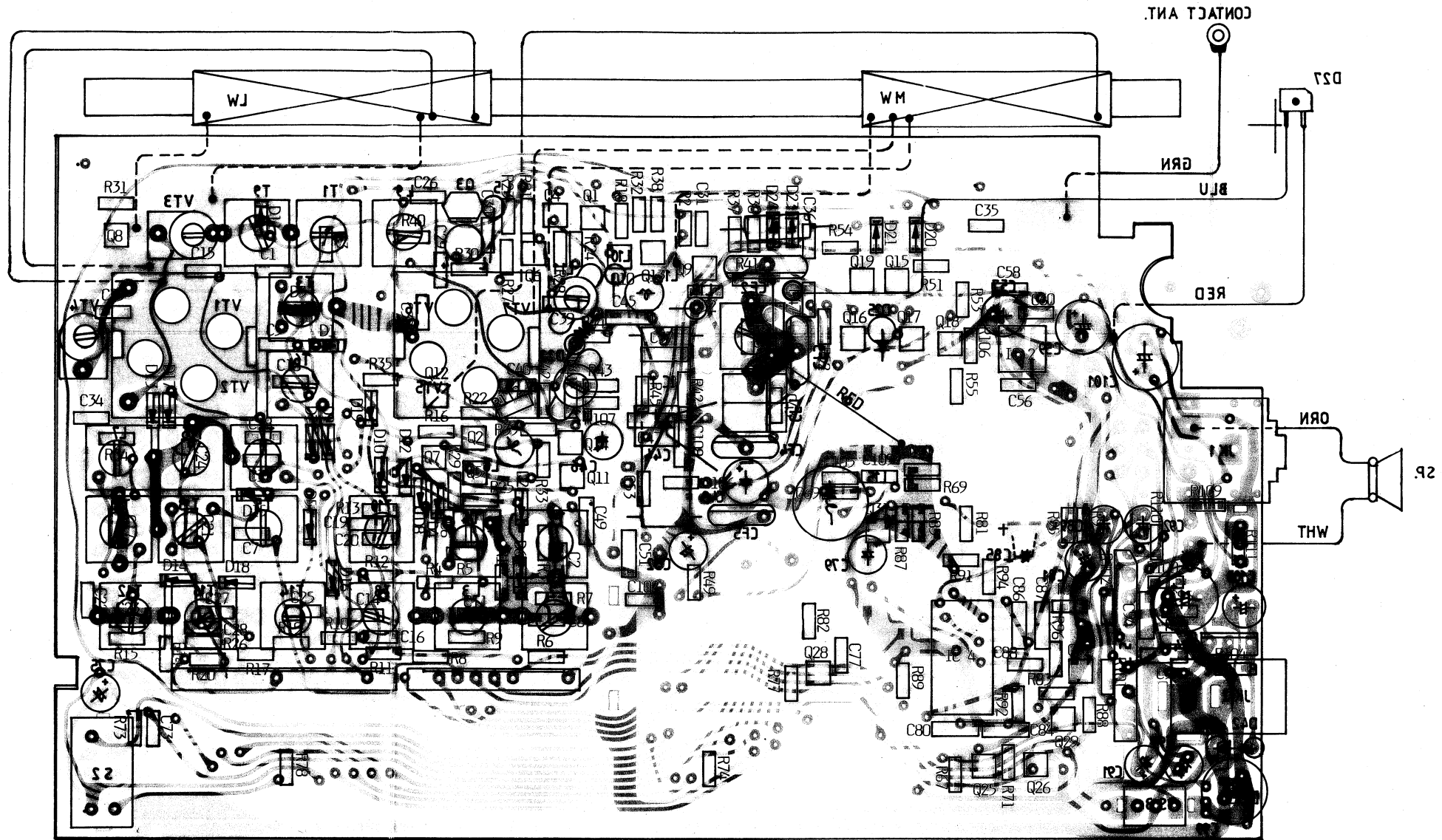
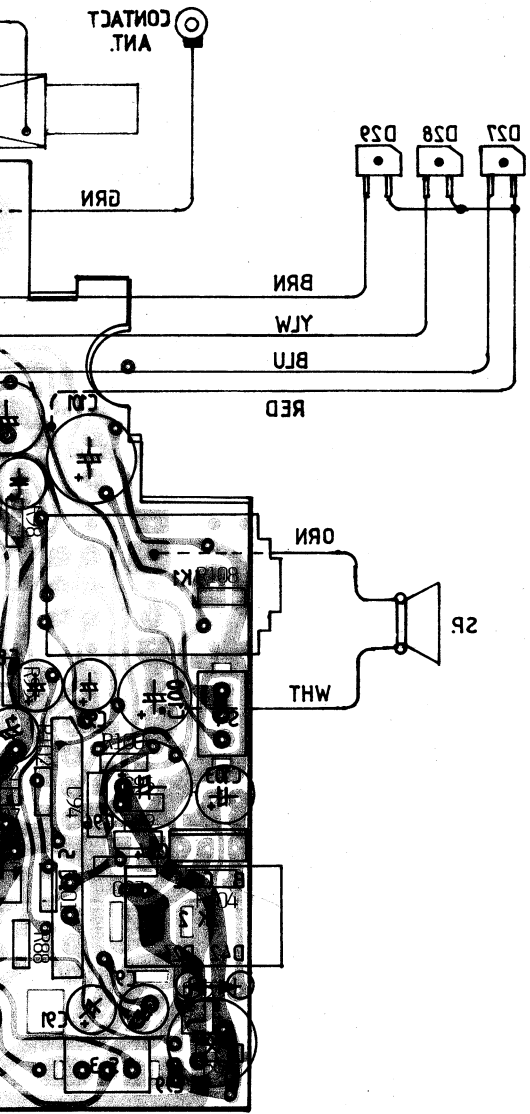






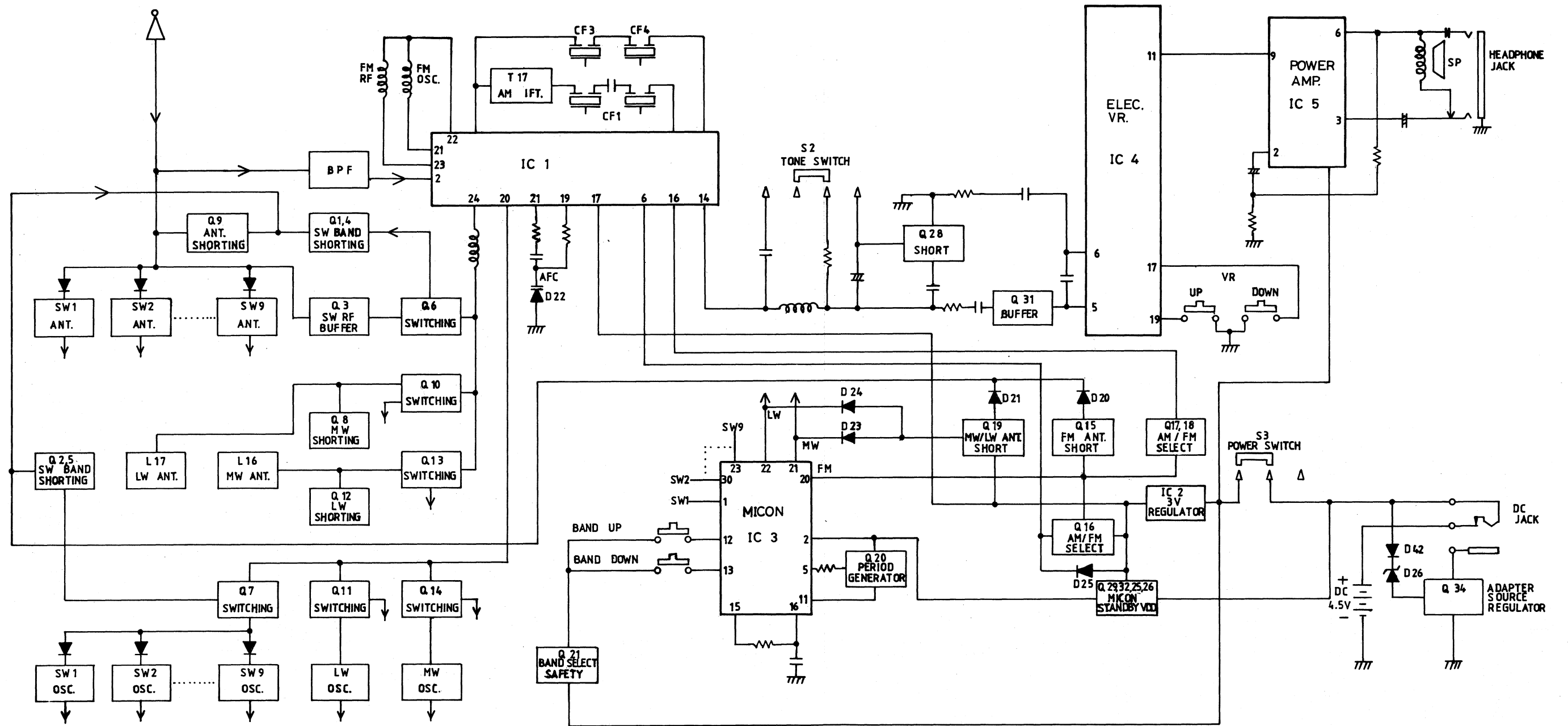




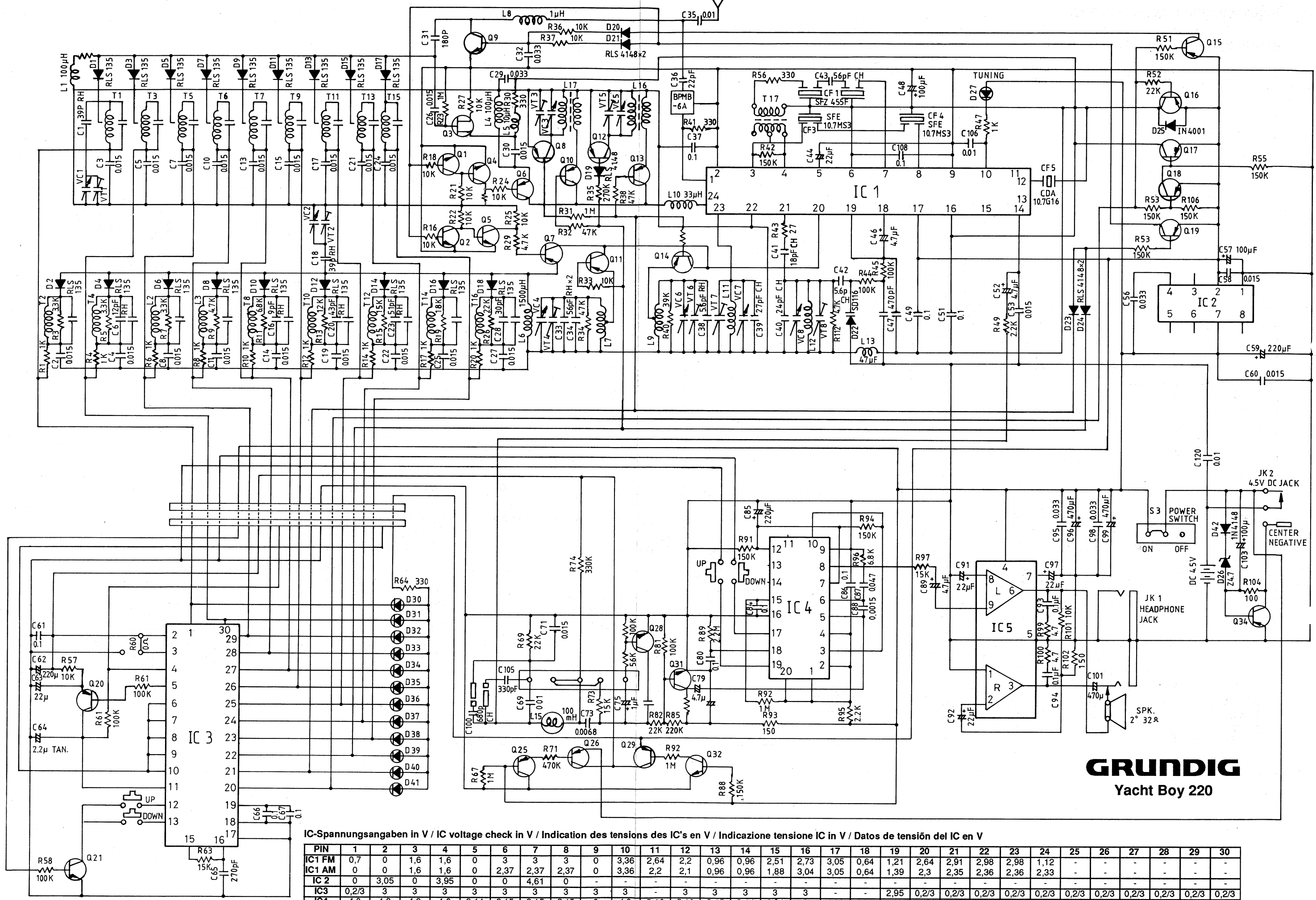


Blockschaltbild Yacht Boy 220

Block Diagram Yacht Boy 220



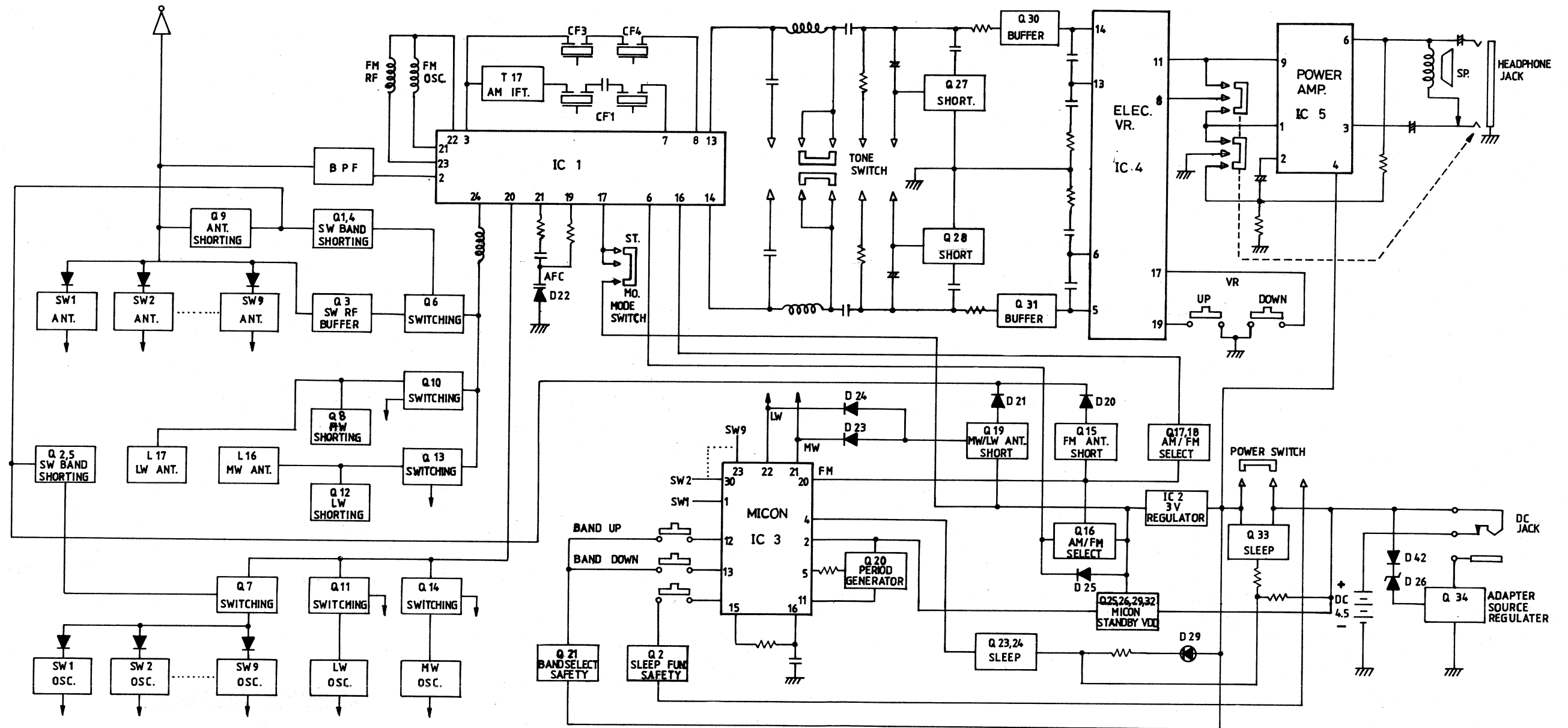


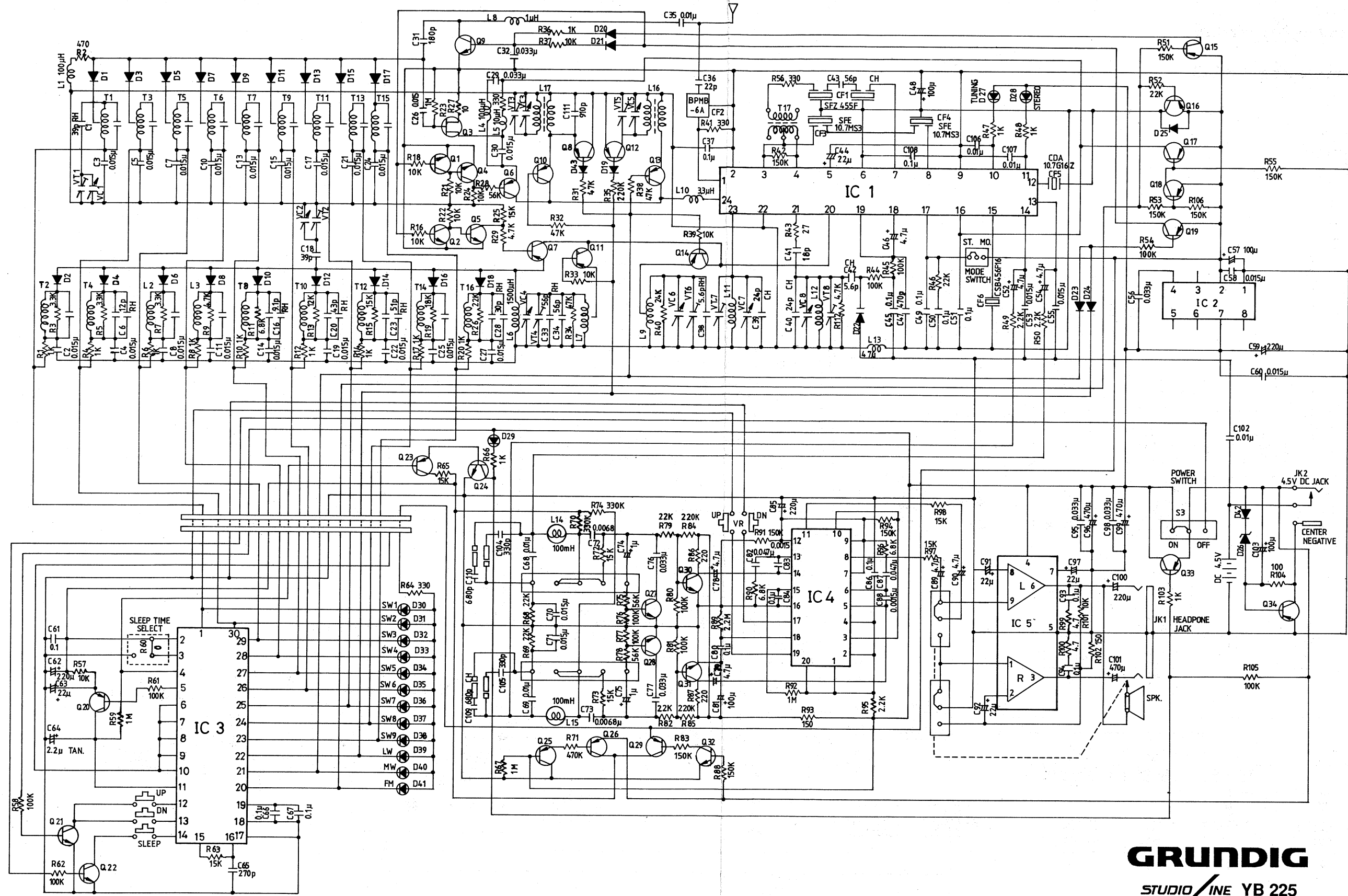


**GRUNDIG**  
Yacht Boy 220

IC-Spannungsangaben in V / IC voltage check in V / Indication des tensions des IC's en V / Indicazione tensione IC in V / Datos de tensión del IC en V

	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
IC1 FM		0,7	0	1,6	1,6	0	3	3	3	0	3,36	2,64	2,2	0,96	0,96	2,51	2,73	3,05	0,64	1,21	2,64	2,91	2,98	2,98	1,12	-	-	-	-	-	-
IC1 AM		0	0	1,6	1,6	0	2,37	2,37	2,37	0	3,36	2,2	2,1	0,96	0,96	1,88	3,04	3,05	0,64	1,39	2,3	2,35	2,36	2,36	2,33	-	-	-	-	-	-
IC 2		0	3,05	0	3,95	0	0	4,61	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IC3		0,2/3	3	3	3	3	3	3	3	3	-	-	3	3	3	3	3	3	3	3	2,95	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3
IC4		4,3	4,3	4,3	4,3	2,14	2,15	2,15	2,15	0	4,3	2,16	2,16	2,15	2,14	3,91	0	4,28	0	4,28	4,3	-	-	-	-	-	-	-	-	-	-
IC5		0	0,61	2,04	4,61	0	2,06	1,25	0,61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**GRUNDIG**  
STUDIO LINE YB 225

IC-Spannungsangaben in V / IC voltage check in V / Indication des tensions des IC's en V / Indicazione tensione IC in V / Datos de tensión del IC en V

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
IC1 FM	0,7	0	1,6	1,6	0	2,37	2,37	2,37	0	3,36	2,64	2,2	0,96	0,96	2,51	2,73	3,05	0,64	1,21	2,64	2,91	2,98	2,98	1,12	-	-	-	-	-	
IC1 AM	0	0	1,6	1,6	0	2,37	2,37	2,37	0	3,36	2,2	2,1	0,96	0,96	1,88	3,04	3,05	0,64	1,39	2,3	2,35	2,36	2,36	2,33	-	-	-	-	-	
IC 2	0	3,05	0	3,95	0	0	4,61	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
IC3	0,2/3	3	3	3	3	3	3	3	3	3	-	3	3	3	3	3	-	-	2,95	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	0,2/3	
IC4	4,3	4,3	4,3	4,3	2,14	2,15	2,15	2,15	0	4,3	2,16	2,16	2,15	2,14	3,91	0	4,28	0	4,28	4,3	-	-	-	-	-	-	-	-	-	
IC5	0	0,61	2,04	4,61	0	2,06	1,25	0,61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Änderungen vorbehalten  
Subject to alteration  
Sous réserve de modifications ultérieures  
Con riserva di modifiche  
Reservado el derecho de modificación

Service Manual Yacht Boy 220/Studio Line YB 225  
Service Manual Yacht Boy 220/Studio Line YB 225  
Instructions de Service Yacht Boy 220/Studio Line YB 225  
Manuale di servizio Yacht Boy 220/Studio Line YB 225  
Manual de Servicio Yacht Boy 220/Studio Line YB 225

Sachnummer 72010-713.95  
Part number 72010-713.95  
Référence 72010-713.95  
No. art. 72010-713.95  
Número de código 72010-713.95