

# YACHT BOY 208-209-210

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## PORTABLE RADIOS

# SERVICE MANUAL

### CHASSIS REMOVAL

1. Remove battery lid and take out batteries.
2. Pull off Tuning Knob.
3. Remove 2 screws underneath cabinet and lift in an upward direction.
4. Push telescopic aerial up from the inside.
5. Remove 4 bronze chassis fixing screws, (2 each side).
6. Carefully lift out chassis, unsolder loudspeaker leads.

### D.C. ALIGNMENT

D.C. Adjustments to be carried out with a battery voltage of 7.5 V.

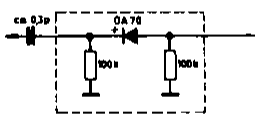
### QUIESCENT CURRENT OF OUTPUT TRANSISTORS

Open link at point X and connect a milliampere meter in series. Adjust R 52 (500 $\Omega$ ) for 5.5 mA. Reconnect link.

### SETTING — UP IF AMPLIFIERS

Connect a DC Valve Voltmeter in parallel with R 23 and adjust pre-set R 28 for 1.3 V.

### FM-IF ALIGNMENT 10.7 MHz.

ALIGNMENT SEQUENCE	CONNECT WOBBULATOR TO.	CONNECTION OF OSCILLOSCOPE	ALIGNMENT POINTS
IF IV	IF III Point 6	<p>Loose capacity coupling via crocodile clip and diode to IF IV Point 4. (Y.B. 210 Point 6)</p> 	(b) fully detuned (a) max. and symmetrical.
IF III	IF II Point 10		(c) and (d) max. and symmetrical
IF II	IF I Point 5		(e) and (f) max. and symmetrical
IF I and IF circuit 9226—703	AM — Aerial		(g) and (h) max. and symmetrical
Discriminator and AM — Rejection	IF III Point 6	Via 50k $\Omega$ cable to AF output IF IV Point 8 (Y.B.210 Point 1/2)	(b) Max. linearity at $\pm 75$ kc/s deviation. Adjust R3 (R2 for 208/210) for best AM Rejection at 50 mV. Input signal to base of BF 241 T6 (BF 186 T6—Y.B.208)
	AM Aerial (AM—Modulation)		If necessary re-align coil (b)

### AM — IF ALIGNMENT 460 kHz.

ALIGNMENT SEQUENCE	CONNECT WOBBULATOR TO.	CONNECTION OF OSCILLOSCOPE	ALIGNMENT POINTS
IF III	IF II Point 10	Loosely coupled to BF 240 (BF 185—Y.B.208) IF III Point 12)	(I) max. and symmetrical.
IF II	IF I Point 5		(II) and (III) max. and symm.
IF I	AM — AERIAL		(IV) and (V) max. and symmetrical

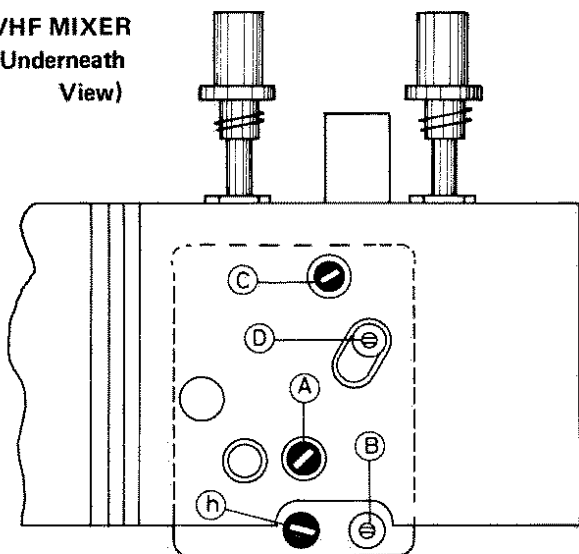
## AM – OSCILLATOR AND AERIAL ALIGNMENT

POINTER & GENERATOR SETTING		OSCILLATOR		AERIAL		INPUTS SENSITIVITY		OSCILLATOR VOLTAGE T3 BF 184		REMARKS
		YB. 208	YB. 209/210	YB. 208	YB. 209/210	YB. 208	YB. 209/210	YB. 208	YB. 209/210	
MW	560 k Hz	(1) Max.		(3) Max.		8	28 $\mu$ V	75–100 mV mV	40–60 mV	For S.W. Connect generator via 18 pF capacitor and disconnect telescopic aerial. For M.W. connect generator to ferrite aerial by coupling coil.
	1450 k Hz	(2) Max.		(4) Max.		7	25 $\mu$ V			
LW	160 k Hz	(5) Max.		(5)	(6) Max.	14	30 $\mu$ V	90–100 mV	40–60 mV	
	240 k Hz			(6)	(7) Max.	12	25 $\mu$ V			
SW	6,1 k Hz	(7)	(8) Max.	(8)	(9) Max.	4 $\mu$ V		60–75 mV.		
	7,2 k Hz			(9)	(10) Max.					

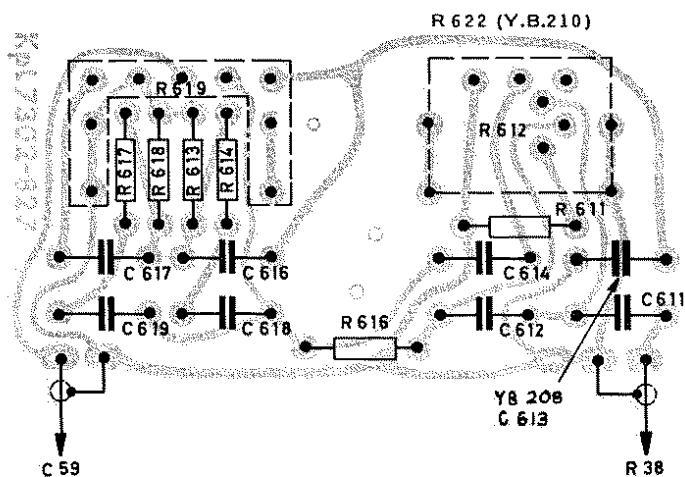
## FM – OSCILLATOR AND AERIAL ALIGNMENT

POINTER & GENERATOR SETTING	OSCILLATOR	COUPLING CIRCUIT	OSCILLATOR VOLTAGE (EMITTER BF 184)	REMARKS
88MHz	(A) Max.	(C) Max.	75 mV	Connect generator via 60 $\Omega$ cable direct to mixer input.
106 MHz	(B) Max.	(D) Max.		

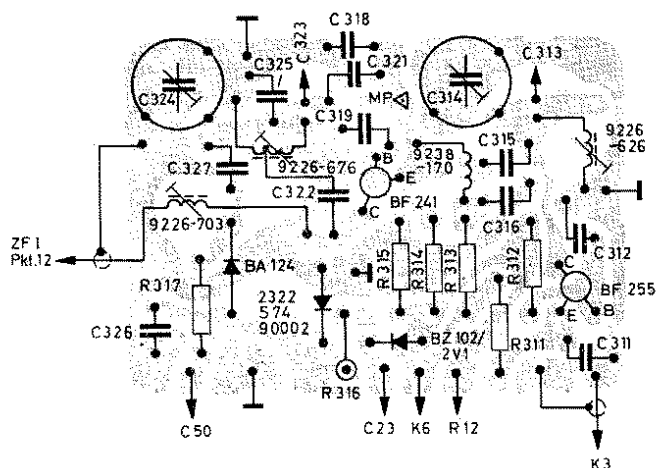
VHF MIXER  
(Underneath View)



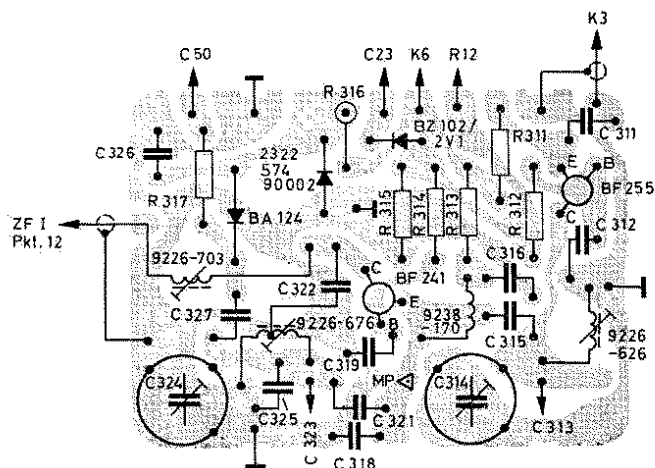
POTENTIOMETER PRINTED CIRCUIT  
(Solder Side View)



VHF MIXER (Solder Side View)

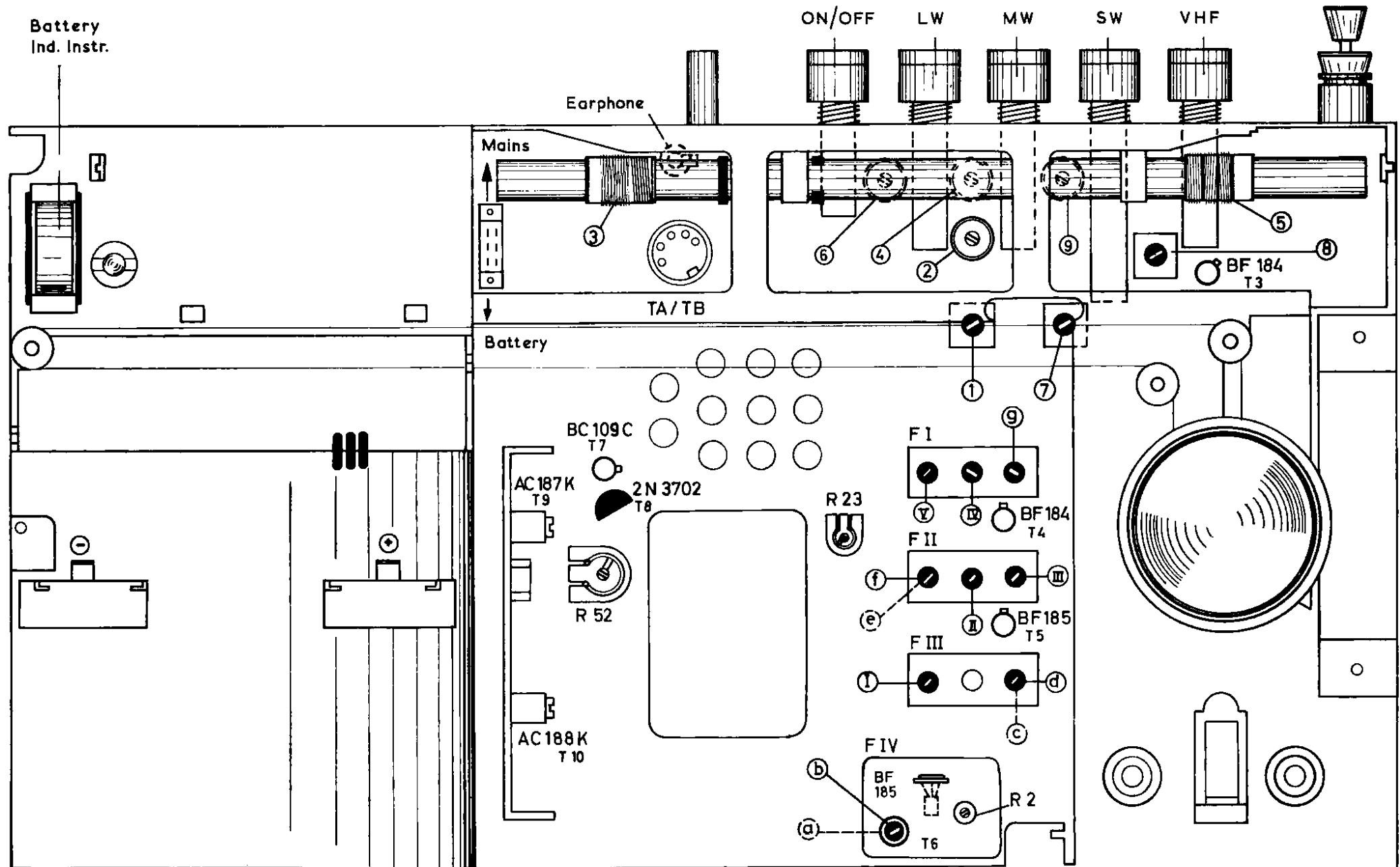


VHF MIXER (Component Side)



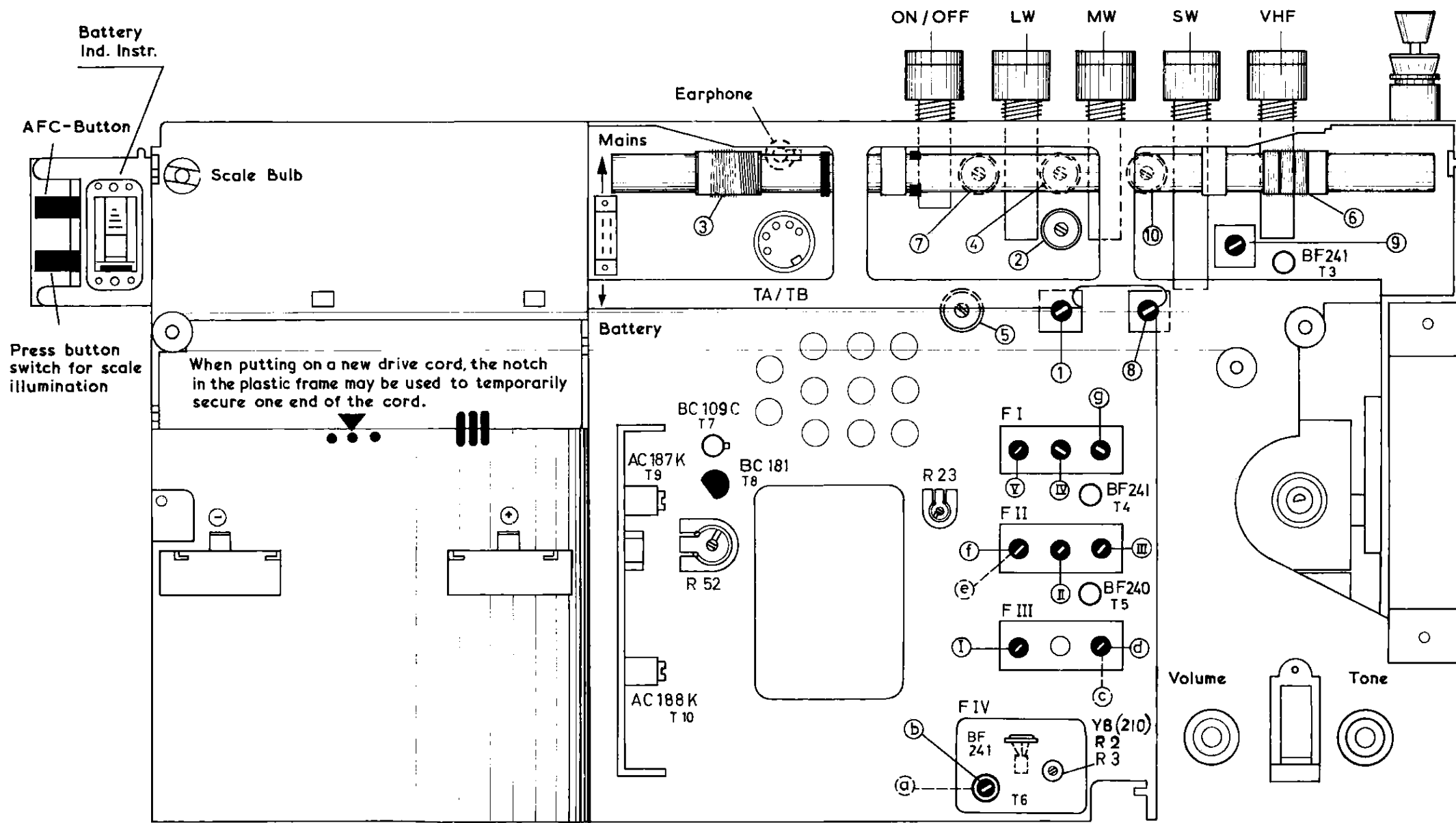
# YACHT BOY 208

## ALIGNMENT POINTS



# YACHT BOY 209/210

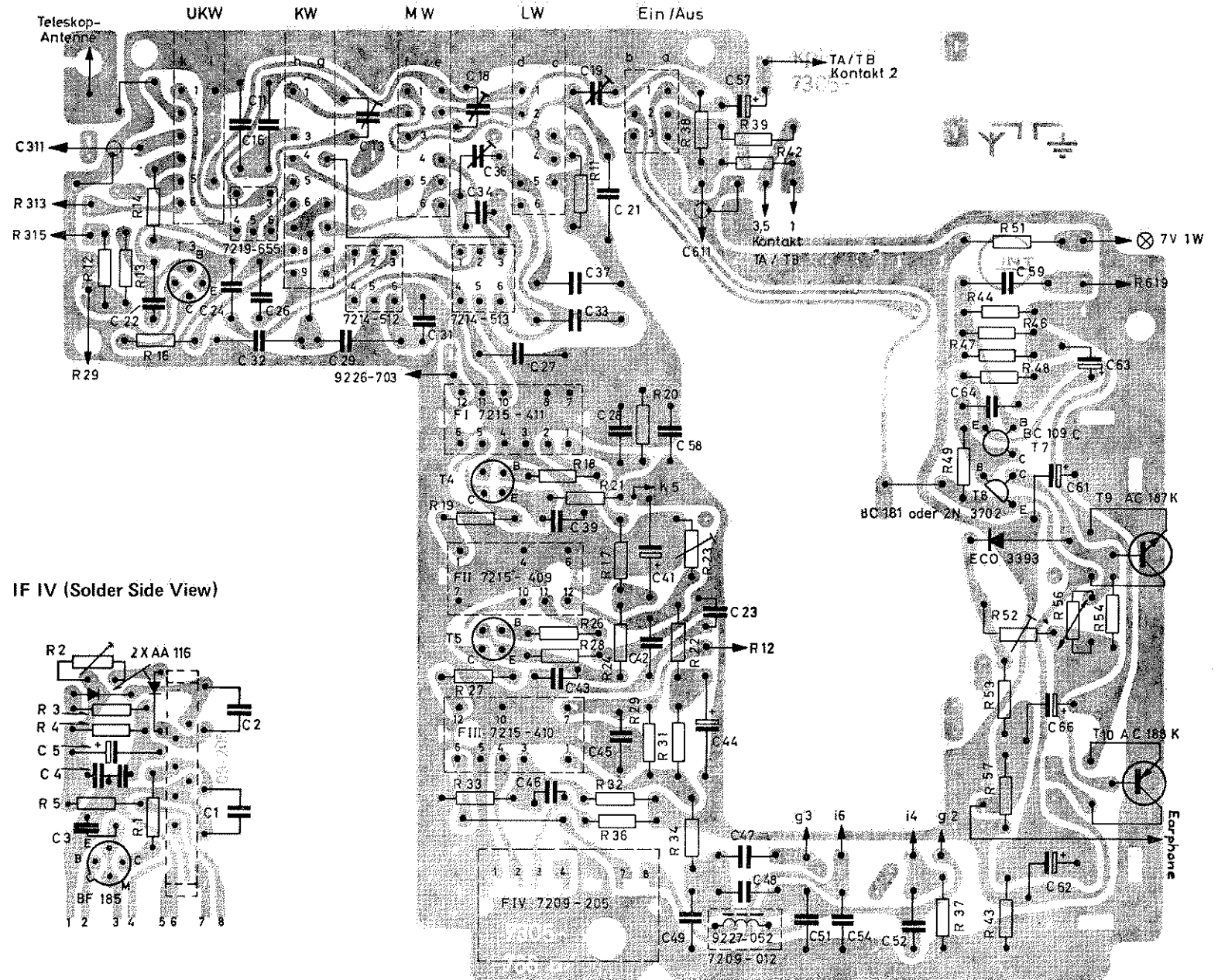
## ALIGNMENT POINTS



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# YACHT BOY 208

PRINTED CIRCUIT (Solder Side View)







# SPARE PARTS LIST

When ordering quote model, description and stores number only.

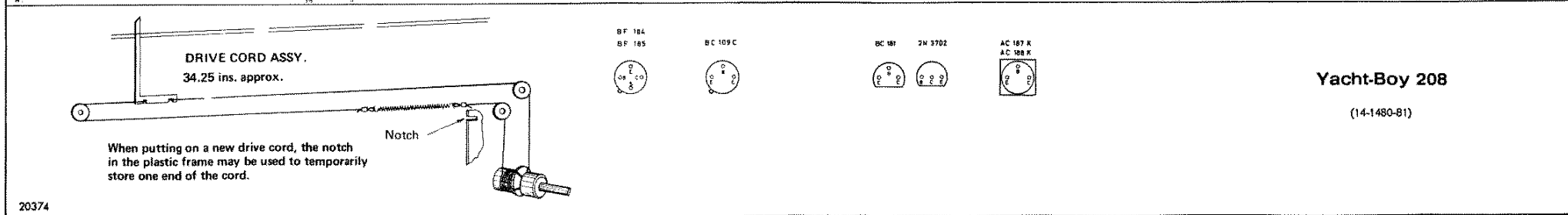
DESCRIPTION	STORES NO.	YACHT BOY		
		208	209	210
Cabinet complete, woodlook	0651/0220/00		X	
Cabinet complete, woodlook	0782/1220/00			X
Cabinet complete, teak	0513/0220/00	X		
Cabinet complete, black	0651/1220/00		X	
Cabinet complete, black	0782/0220/00			X
Cabinet complete, graphite	0513/1220/00	X		
Padded Cabinet Side, woodlook	0651/0225/00		X	X
Padded Cabinet Side, teak	0513/0225/00	X		
Padded Cabinet Side, black	0651/1225/00		X	X
Padded Cabinet Side, Graphite	0513/1225/00	X		
Ornamental Side Frame, chrome	0651/0223/00		X	X
Ornamental Side Frame, chrome	0513/0223/00	X		
Frame Clamp	0782/0499/00			X
Scale c/w Frame	0651/0200/00		X	X
Scale, black/silver	0513/0200/00	X		
Speaker Grille	0651/0226/00		X	X
Speaker Grille, alu/black	0513/0226/00	X		
Speaker Grille, for black set	0651/1226/00		X	
Speaker Grille, for black set	0782/0226/00			X
Grundig emblem, black/chrome	0407/0330/00	X	X	X
Ornamental Plate	0651/0429/00		X	
Ornamental Plate	0782/0429/00			X
Decorative Trim, lower, chrome	0651/0422/00		X	X
Decorative Trim, lower, chrome	0513/0422/00	X		
Decorative Trim, upper, chrome	0651/0421/00		X	X
Decorative Trim, upper, chrome	0513/0421/00	X		
Foot, black	0513/0334/00	X	X	X
Battery Contact Plate, cabinet	0513/0375/00		X	X
Contact Plate on Battery Lid	0513/0374/00		X	X
Battery Contact, single	0513/0371/00		X	X
Battery Contact, double w. single	0513/0372/00		X	X
Battery Contact, double w. double	0513/0373/00		X	X
Battery Container Lid, black	0513/0324/00	X	X	X
Bearing Housing compl.	0651/1222/00		X	X
Handle End, right	0651/0436/00		X	X
Handle End, left	0651/0437/00		X	X
Handle, chrome/black	0651/0336/00		X	X
Handle, chrome/black	0513/0336/00	X		
Handle Fixing Screw	0513/0337/00	X		
Washer 2x	0901/9240/00	X		
Hex Nut M4	0902/0004/01	X	X	X
Handle Keeper	0554/0452/00		X	X
Coil Spring	0239/0305/00		X	X
Ch/Hd Screw M4 x 12	0903/0412/01		X	X
Telescopic Aerial Cover	0651/0428/00		X	X
Battery Fitting Label	0652/0851/00		X	X
Yacht Boy Label	0651/0184/00	X	X	X
Cabinet Back, teak	0651/0221/00		X	X
Cabinet Back, teak	0513/0221/00	X		
Cabinet Back, mid. graphite	0651/1221/00		X	X
Cabinet Back, mid. graphite	0513/1221/00	X		

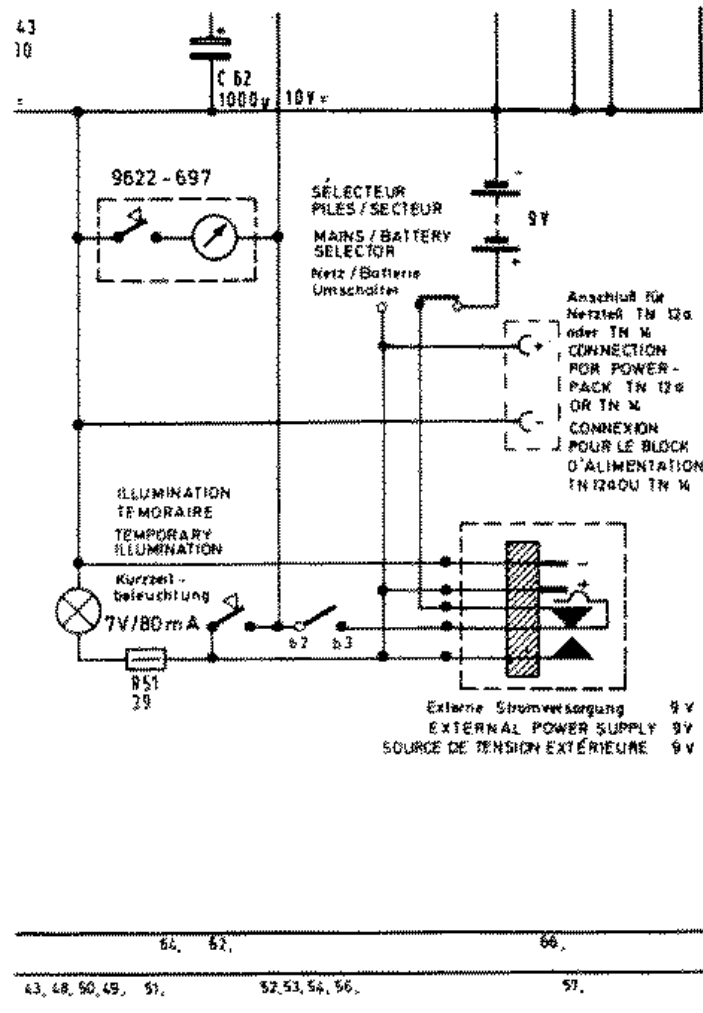
DESCRIPTION	STORES NO.	YACHT BOY		
		208	209	210
Inner Cabinet Back Frame, black	0651/0426/00		X	X
Inner Cabinet Back Frame, black	0513/0426/00	X		
Compression Spring	0513/0620/00	X	X	X
Sliding Door, Black	0651/0427/00		X	X
Sliding Door, Black	0513/0427/00	X		
Instru/Hd. Self Tapping Screw BZ2.9 x 13	0513/0450/00	X	X	X
Push Button Escutcheon, black/alu.	0513/0451/00		X	
Push Button Escutcheon, black/alu.	0513/0222/00	X		
Push Button Escutcheon, black/alu.	0651/0050/01			X
Decorative Trim, centre, chrome	0651/0423/00		X	X
Decorative Trim, centre, chrome	0513/0423/00	X		
Push Button, black/chrome	0651/0202/00		X	X
Push Button, black/chrome 4 x	0471/0201/00	X		
Push Button w. red spot, black/chrome	0471/0202/00	X		
Push Button, black/chrome	0651/0201/00		X	
Push Button, black/chrome	0782/0201/00			X
Push Button, red	0651/0203/00		X	
Push Button, red	0782/0203/00			X
Control knob, black/chrome	0471/0261/00	X	X	
Control knob, black/chrome	0782/0261/00			X
Tuning knob, black/chrome	0513/0260/00	X	X	X
Coil Spring	0239/0304/00	X	X	X
Station Marker, green	0565/1840/00		X	X
Station Marker, red	0565/0840/00		X	X
Station Marker, Rail	0652/0842/00			X
Inner Mounting Frame, black	0651/0102/00		X	X
Inner Mounting Frame, black	0513/0102/00	X		
Hex/hd. Self Tapping Screw 2.9 x 9.5	0913/2909/56	X	X	X
Plastic Drive Cord Guide	0513/0269/00	X	X	X
Drive Drum	0513/0244/00	X		
Drive Drum	0651/0244/00		X	X
Coil Spring	0492/0305/00		X	X
Coil Spring	0492/0305/00	X		
Drive Cord, 36-in.	0900/1001/00		X	X
Drive Cord, 33-in.	0900/1001/00	X		
Guide Cord, 22-in.	0900/1002/00		X	X
Guide Cord, 25-in.	0900/1002/00	X		
Eyelet	0900/2502/00	X	X	X
Pointer	0651/0182/00		X	X
Pointer	0513/0182/00	X		
Extension Spring	0395/0256/00	X	X	X
Pilot Bulb Holder Socket	0513/0127/00	X	X	X
Pilot Bulb 7V 80 mA	0900/3605/00		X	X
Pilot Bulb 7V 1 W	0395/0327/00	X		
Leaf Spring	0513/0128/00	X	X	X
Battery Indicator Instrument 9V	0409/0025/00	X	X	X
Scale Illumination Switch	0651/0205/00		X	X
Scale Illumination Switch	0513/0205/00	X		
Compression Spring	0477/0621/00	X	X	X
<b>Ferrite Aerial Rod c/w Coils</b>	0513/0009/00	X	X	X
Ferrite Aerial Rod	0513/0009/01	X	X	X
Ferrite Aerial Rod Support	0364/0196/00	X	X	X
Ferrite Aerial Rod Wire Clamp	0501/0501/00	X	X	
Coil Carrier	0234/0333/00			X
MW-Ferrite Aerial Coil	0513/0009/02	X	X	X
LW-Ferrite Aerial Coil	0513/0009/03	X	X	X
Aerial Extension Coil	0513/0009/05	X	X	
Aerial Extension Coil	0513/0009/06			X
Battery Connector Assy.	0395/0192/00	X	X	X
Light Diffusion Plate	0651/0313/00		X	X
Light Diffusion Plate	0513/0313/00	X		



DESCRIPTION	STORES NO.	YACHT BOY		
		208	209	210
Diffusion Plate Backing	0651/0314/00		X	X
Diffusion Plate Backing	0513/0314/00	X		
Telescopic Aerial c/w Bracket	0651/0227/00		X	X
Telescopic Aerial c/w Bracket	0513/0227/00	X		
Speaker	0513/0250/00	X	X	X
Hex/Hd. Self Tapping Screw, 2.9 x 9.5	0913/2909/56	X	X	X
Hex/Hd. Self Tapping Screw, 2.9 x 6.5	0913/2906/56	X	X	X
Printed Circuit complete	0651/0020/00		X	
Printed Circuit complete	0513/0020/00	X		
Printed Circuit complete	0782/0020/00			X
Push Button Unit	0651/0159/00		X	X
Push Button Unit	0513/0159/00	X		
Contact Slider	0513/1039/00		X	X
Comp. Spring	0513/1040/00		X	X
Contact	0513/1041/00		X	X
Plastic Sec. Bracket	0513/1042/00		X	X
Sec. Ring	0513/1043/00		X	X
Hex/Hd. Self Tapping Screw, 2,9 x 4.7	0913/2904/76	X	X	X
Heat Sink	0900/3001/00	X	X	X
Ch/Hd. Screw, Steel M5 x 10	0902/5010/01	X	X	X
MW-LW Oscillator Coil Pack	0542/0014/00		X	X
Alignment Core	0395/0048/00	X	X	X
SW-Oscillator Coil Pack	0513/0013/00	X	X	X
Alignment Core	0280/0049/00	X	X	X
SW-RF Coil Pack	0651/0014/00		X	X
SW-RF Coil Pack	0513/0014/00	X		
Alignment Core	0513/0048/00	X	X	X
IF-Transformer, IF 1	0513/0051/00	X	X	X
IF-Transformer, IF 11	0513/0052/00	X	X	X
IF-Transformer, IF 111	0513/0053/00	X	X	X
IF-Transformer, IF 1V	0651/0054/00		X	X
IF-Transformer, IF 1V	0513/0054/00	X		
Alignment Core	0492/0048/00		X	X
Alignment Core	0234/0047/00	X		
Alignment Core	0492/0049/00	X	X	X
Alignment Core	0191/0049/00	X	X	X
Pot Core Pair	0234/0047/00	X	X	X
Ratio Discriminator	0780/0018/00		X	X
Ratio Discriminator	0513/0019/00	X		
Transistor BF 185	3235	X	X	X
Diode AA 116	3171	X	X	X
Electrolytic Cap. W.E. 2 $\mu$ F 15V	KEL 2/15	X	X	X
Min. Pre-Set Potentiometer 1k	14010	X	X	X
AF-Choke	0513/0097/00	X	X	X
Pot Core Pair	0312/0054/00	X	X	X
Screen	0553/0841/00			X
5-pole Stereo Socket less Pole 4	2153	X	X	X
Ferrite Bead	19004	X	X	
Earphone Socket	0234/0303/00			X
Earphone Socket	0781/0303/00			X
Power Pack Socket	407/302/00			X
Mains/Battery Switch	0471/0205/00	X	X	X
FM Aerial Transformer	0395/0093/00	X	X	X
Double Sil: Diode ECO 9676	3244		X	X
Transistor Pair AC 187K/AC 188K	18005	X	X	X
Diode ECO 3393	3195	X	X	X
Electrolytic Cap. W.E. 5 $\mu$ F 6V	KEL-5/6	X	X	X
Electrolytic Cap. W.E. 5 $\mu$ F 35/40B	KEL-5/35	X		
Electrolytic Cap. P.C. 100 $\mu$ F 10V	KEP-100/10		X	X
Electrolytic Cap. W.E. 250 $\mu$ F 6V	KEL-250/6	X		
Electrolytic Cap. U.F. 500 $\mu$ F 10V	KEF-500/10	X		

DESCRIPTION	STORES NO.	YACHT BOY		
		208	209	210
Electrolytic Cap. U.F. 1000 $\mu$ 10V	KEF-1000/10	X	X	X
Min. Pre-set Capacitor 2. . .6 pF	11041	X	X	X
Min. Pre-Set Capacitor 3. . .12 pF	11032	X	X	X
Min. Pre-Set Capacitor 4. . .20 pF	11031	X	X	X
Min. Pre-Set Capacitor 10. . .60 pF	10982	X	X	X
Min. Pre-Set Potentiometer 500 k	14028		X	X
Min. Pre-Set Potentiometer 500 k	14020	X		
Min. Pre-Set Potentiometer 500 $\Omega$ 10%	17011	X	X	X
Thermistor 100 $\Omega$	17053	X	X	X
Thermistor 120 $\Omega$	17046		X	X
<b>AF-Printed Circuit</b>	0651/0021/00		X	X
AF-Printed Circuit Plate No. 7302-674	0513/0021/00	X		
Potentiometer 100k R 619 Vol.	0651/0144/00	X		
Potentiometer 200k w. Switch Vol.	0513/0145/00	X		
Potentiometer 100k R.612 Tone	0651/0145/00		X	X
Potentiometer 500k Tone	0513/0144/00	X		
<b>FM-Unit</b>	0651/0006/00		X	X
FM-Unit	0513/0006/00	X		
Tuning Capacitor	0513/0211/00	X	X	X
FM-RF Coil	0477/0027/00	X	X	X
FM-Oscillator Coil	0492/0016/00	X	X	X
Alignment Core	0492/0048/00		X	X
Pot Core Pair	0234/0050/00	X	X	X
Choke	0492/0097/00	X	X	X
Ferrite Bead	19004	X	X	X
Stabiliser 2, 1 St 1	10602	X	X	
Diode BA 124	3252			X
Min. Pre-Set Capacitor 2. . .6pF	10921	X	X	
Min. Pre-Set Capacitor 2. . .6pF	11041			X
Diode BZ 102/2 V 1	3374			X
Min. Pre-Set Capacitor 4. . .20pF	10952	X	X	
Assy. Resistor	30061			X
Screening Can	0513/0502/00	X	X	X
Grommet	0651/0335/00		X	X
Ck/Hd Screw AM 4 x 12	0905/4012/01			X
Ck/Hd Screw AM 4 x 10	0905/4010/01			X
Instruction book	0651/0272/00		X	
Instruction book	0513/0272/00	X		
Instruction book	0782/0272/00			X
Transistor T1, T5 & T6	BF 185	3235		
Transistor T1	BF 255	3357	X	X
Transistor T2, T3, T4	BF 184	3237		
Transistor T2, T3, T4	BF 241	3348	X	X
Transistor T2, T3, T4	BF 237	3316	X	X
Transistor T5	BF 240 OR	3349	X	X
Transistor T5	BF 238	3317	X	X
Transistor T6	BF 241 OR	3348	X	X
Transistor T6	BF 237	3316	X	X
Transistor T7	BC 109C OR	3285	X	X
Transistor T7	BC 184C OR	3347	X	X
Transistor T7	BC 239C	3382	X	X
Transistor T8	BC 181 OR	3305	X	X
Transistor T8	2N 3702	3239	X	X
Transistor T9	Transistor Pair AC 188/187K	18005	X	X





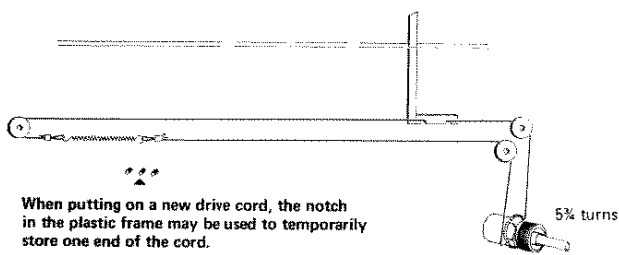
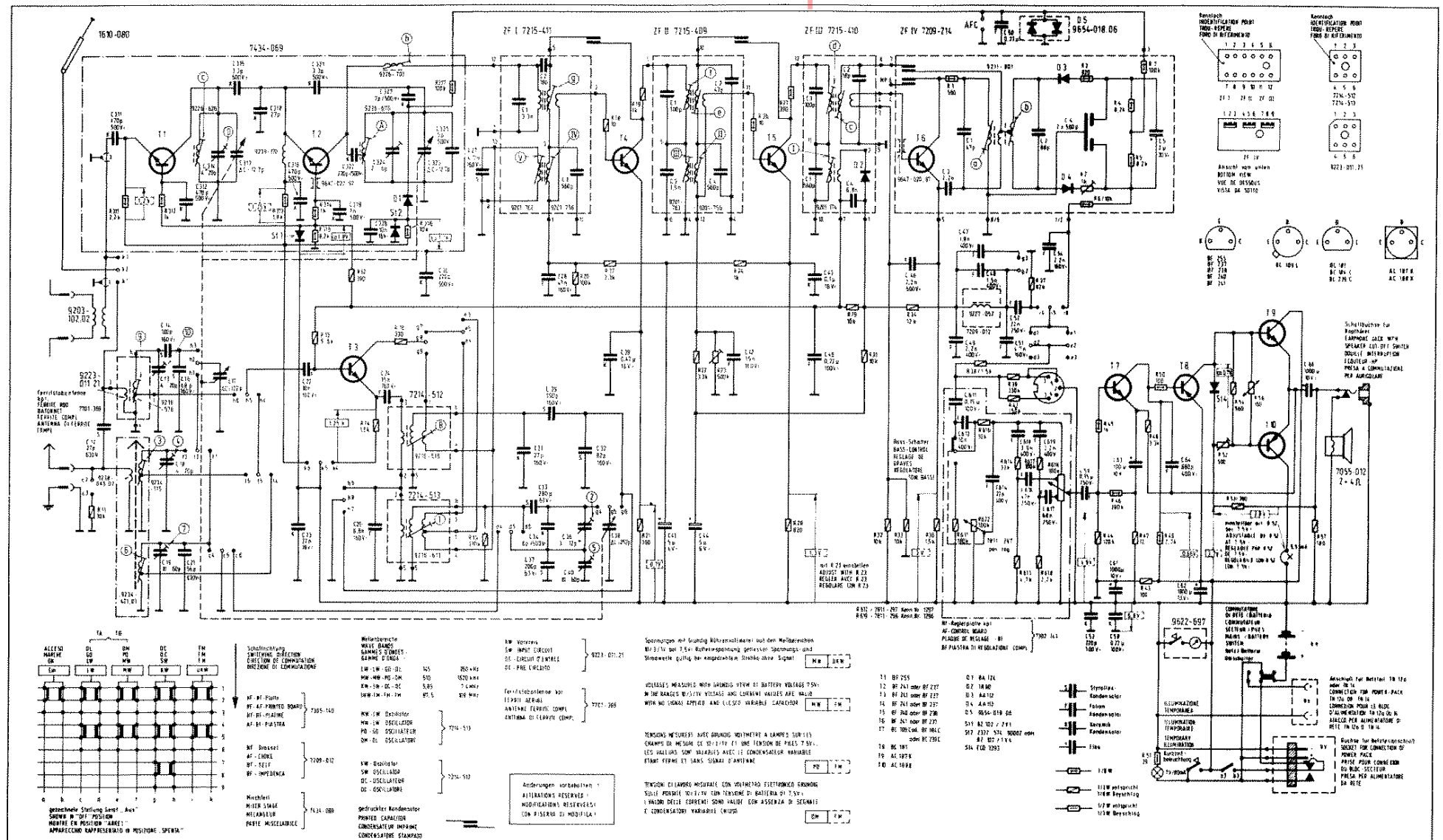
**Circuit Difference**

**For**

**Yacht-Boy 209**

(14-1610-8141)





AM-FM DRIVE CORD  
length approx. 890 mm  
(variable capacitor opened)

Yacht-Boy 210  
(14-1648-8201)