Sailor

Sailor

NOTE!

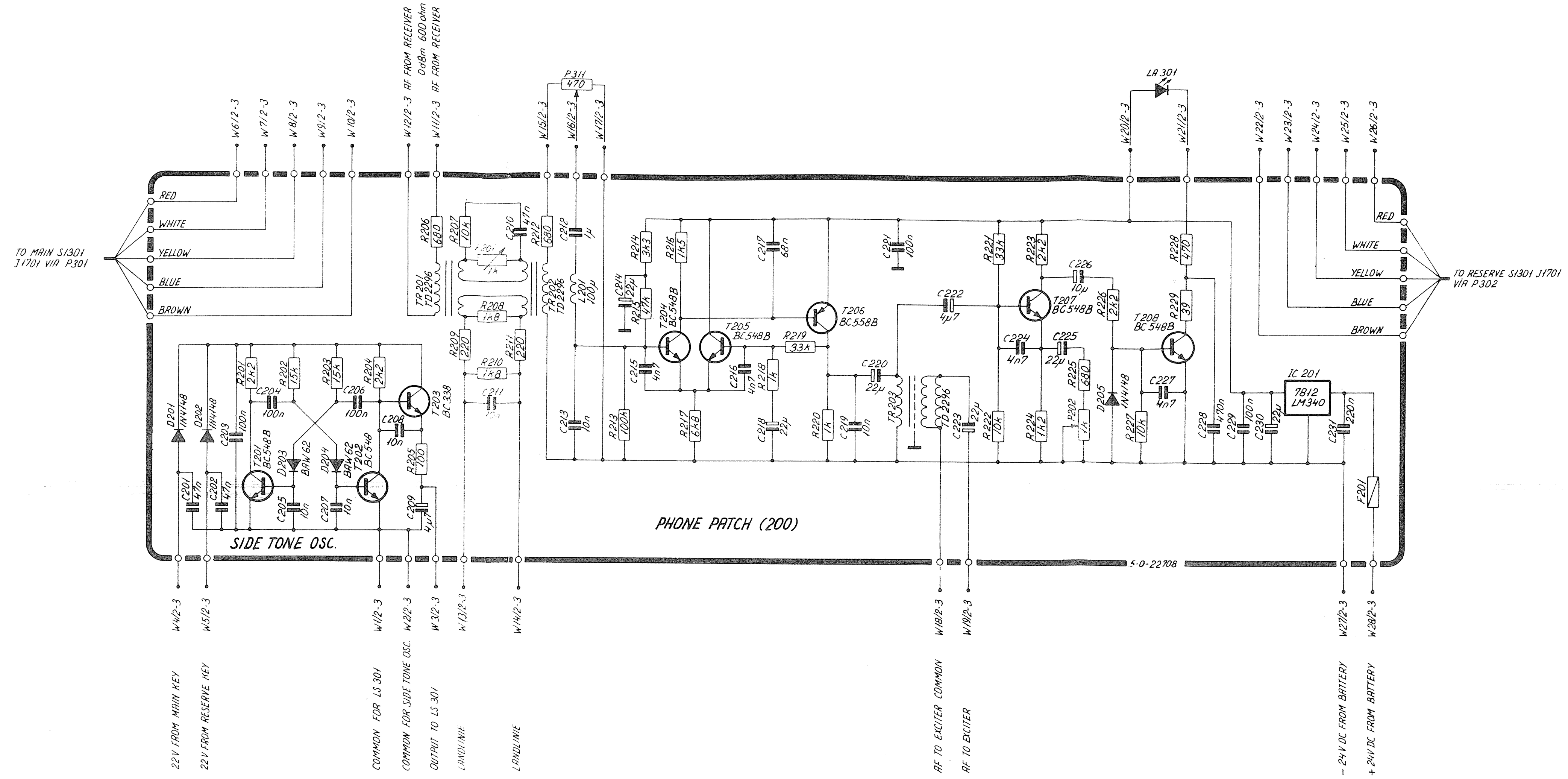
This book is only valid for serial No. above 201206.
Tuning-up for 1.6 MHz to 4 MHz has been modified.

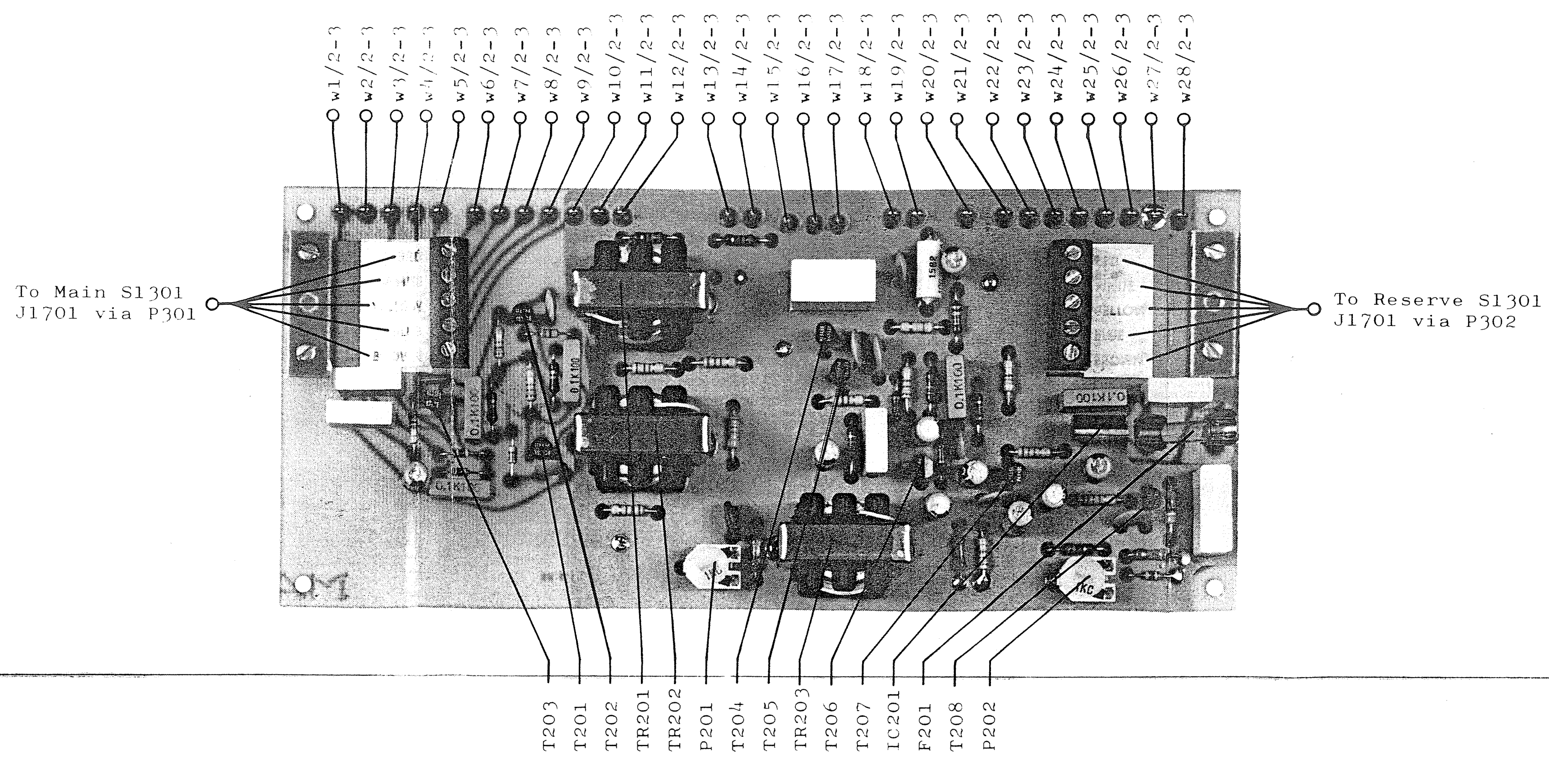
INSTRUKTIONSBOG FOR SAILOR T1127/T1127L

INSTRUCTION BOOK FOR SAILOR T1127/T1127L

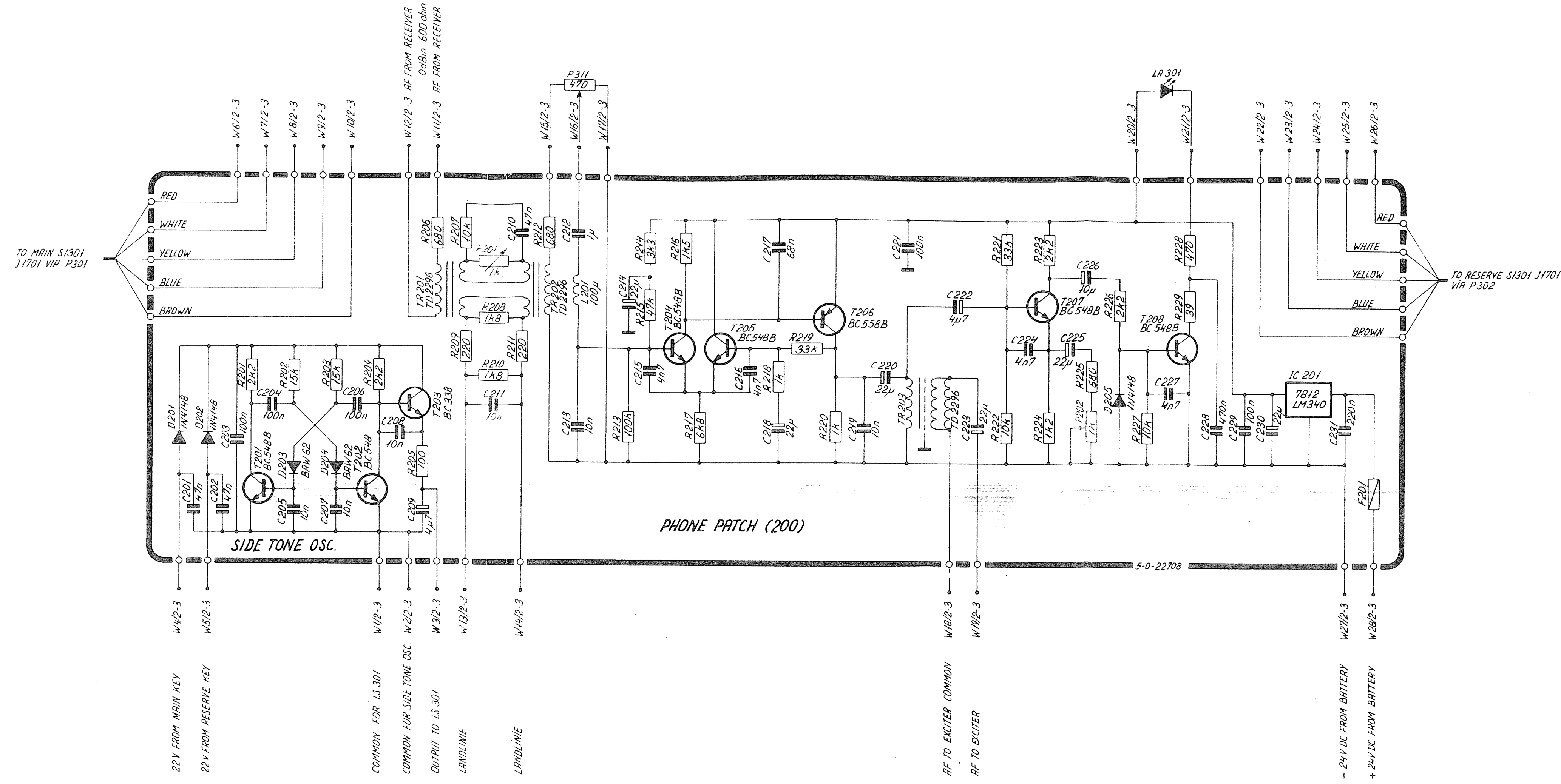
A/S S. P. RADIO · AALBORG · DENMARK

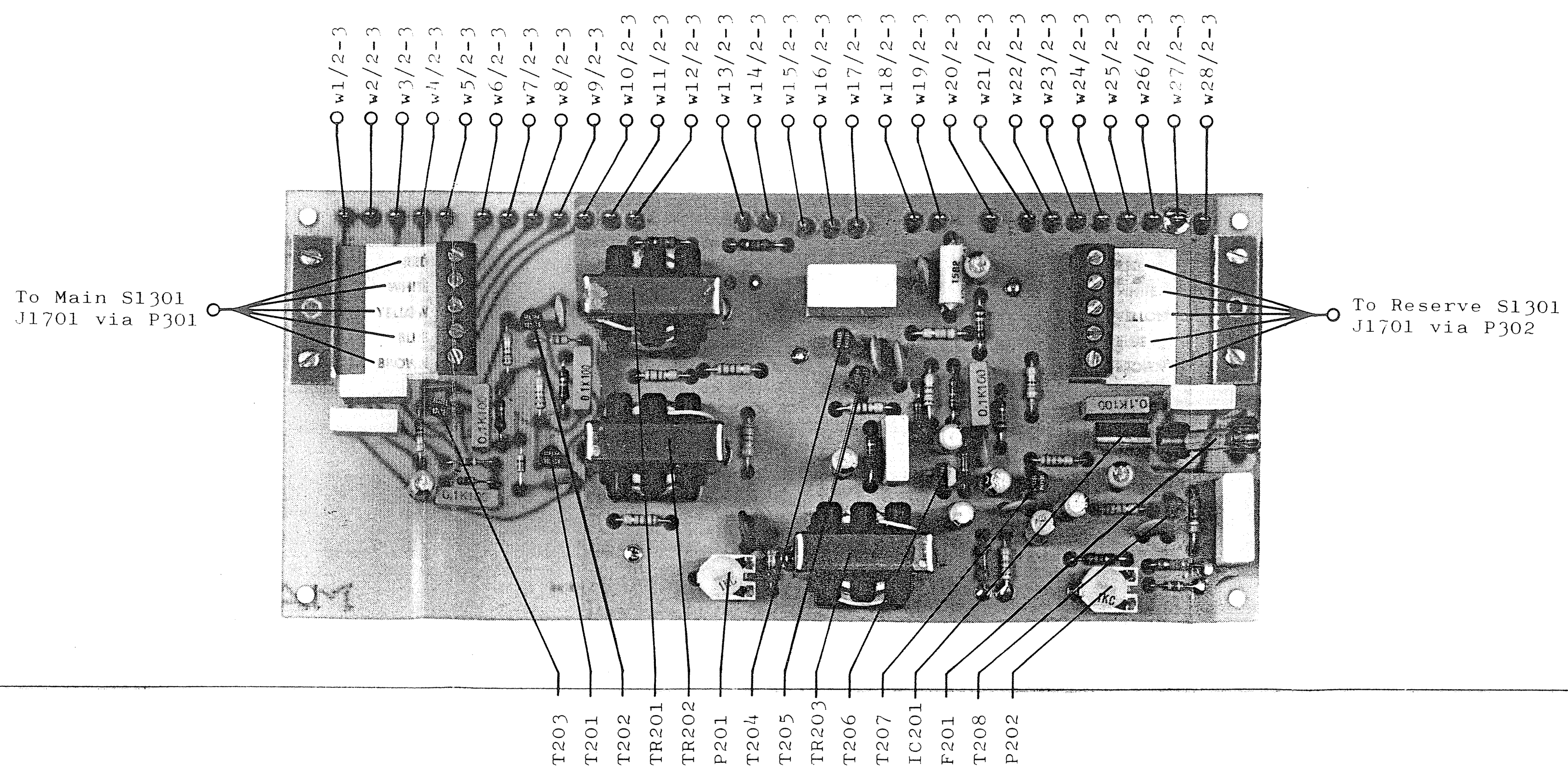
H 1222





PHONE PATCH


PHONE PATCH (200)
SIDE TONE OSC.
TO MAIN S1301 J1701 VIA P301
TO RESERVE S1301 J1701 VIA P302
RED
WHITE
YELLOW
BLUE
BROWN
AF FROM RECEIVER 0dBm 600ohm
AF FROM RECEIVER
22V FROM MAIN KEY
22V FROM RESERVE KEY
COMMON FOR LS 301
COMMON FOR SIDE TONE OSC
OUTPUT TO LS 301
LANDLINIE
LANDLINIE
RF TO EXCITER COMMON
RF TO EXCITER
- 24V DC FROM BATTERY
+ 24V DC FROM BATTERY
IC 201 7812 LM340
LA 301
5-0-22708


w1/2-3
w2/2-3
w3/2-3
w4/2-3
w5/2-3
w6/2-3
w7/2-3
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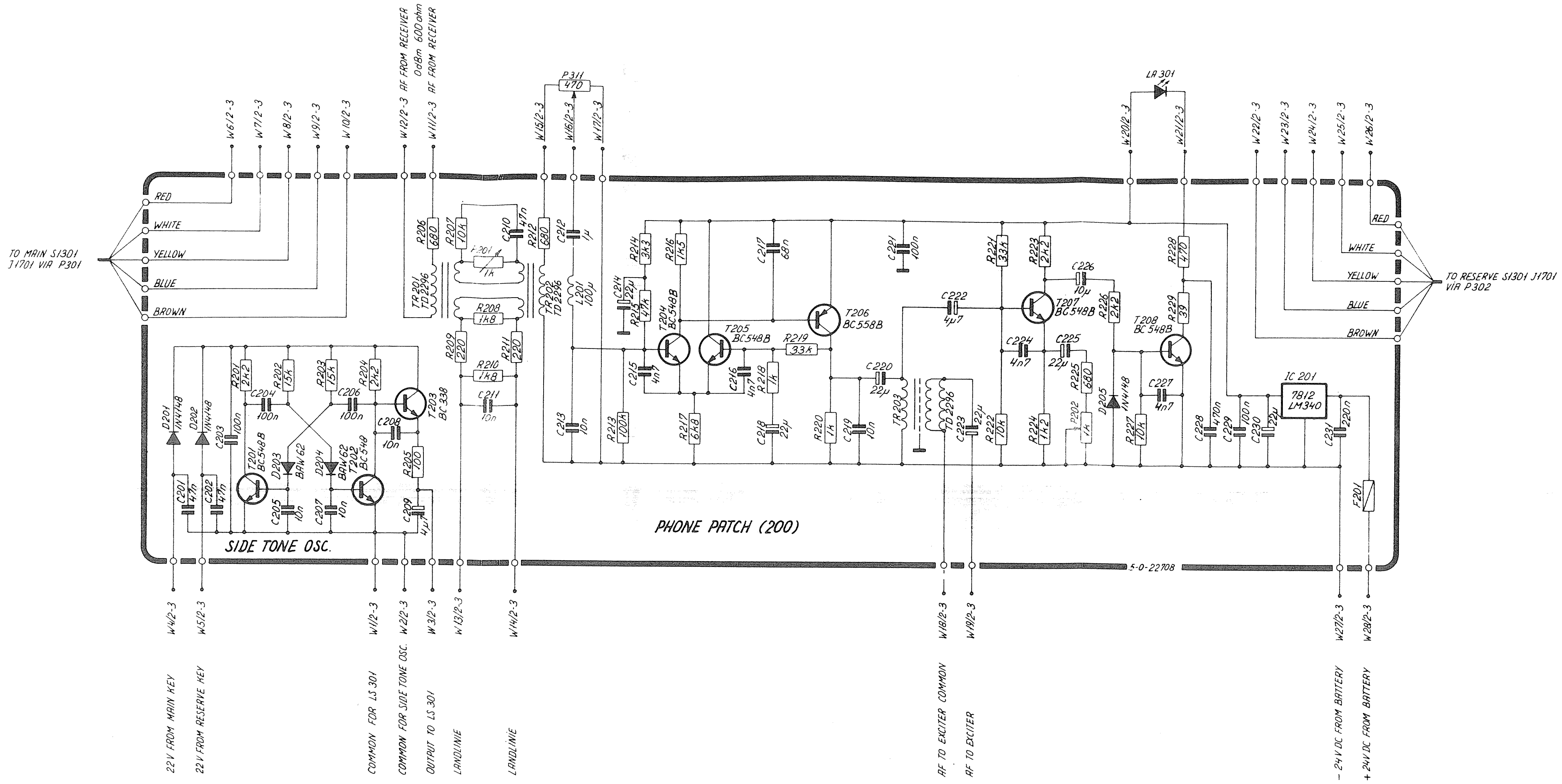
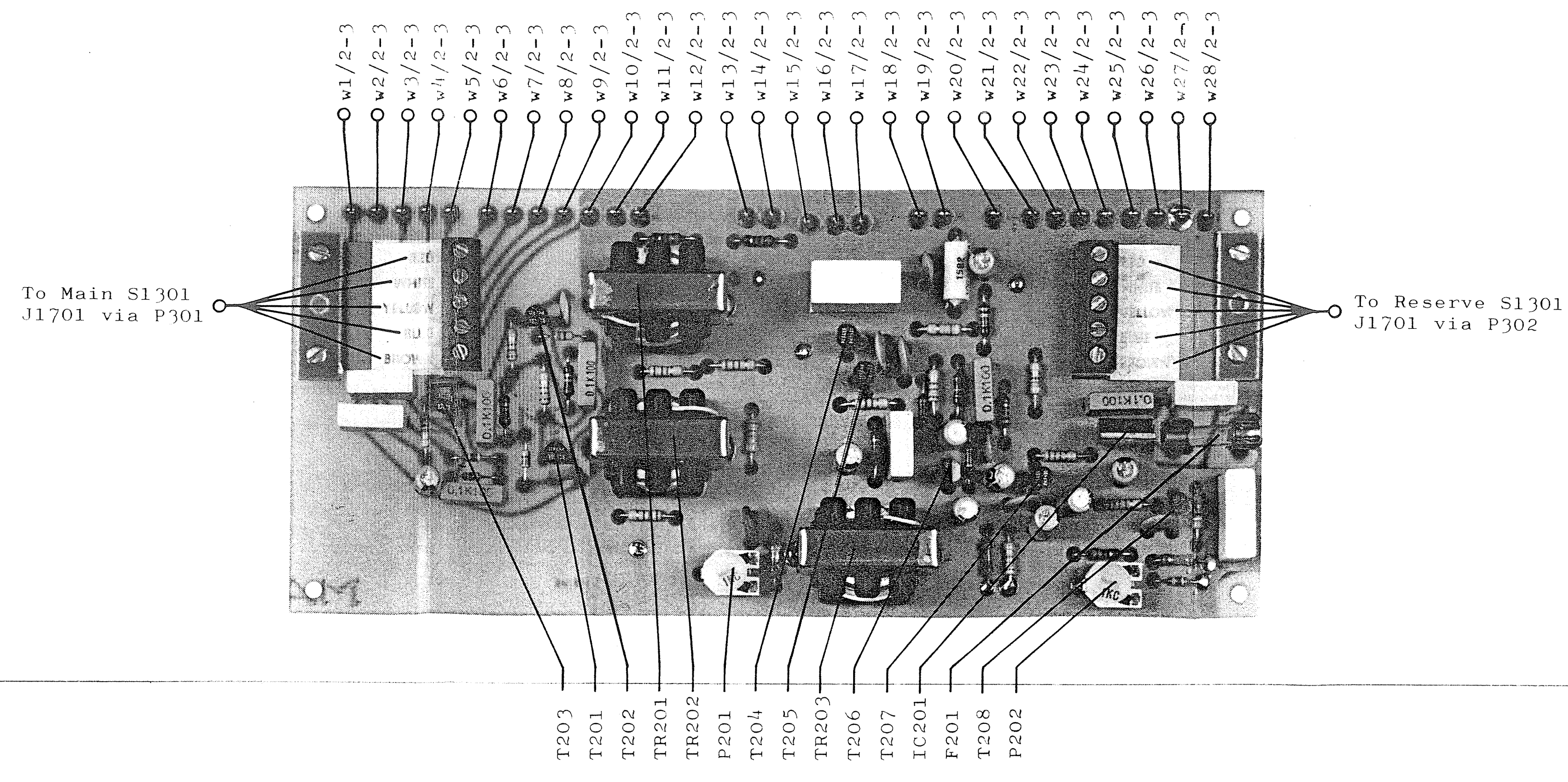
w9/2-3
w10/2-3
w11/2-3
w12/2-3
w13/2-3
w14/2-3
w15/2-3
w16/2-3
w17/2-3
w18/2-3
w19/2-3
w20/2-3
w21/2-3
w22/2-3
w23/2-3
w24/2-3
w25/2-3
w26/2-3
w27/2-3
w28/2-3
To Main S1301 J1701 via P301
To Reserve S1301 J1701 via P302
T203
T201
T202
TR201
TR202
P201
T204
T205
TR203
T206
T207
IC201
F201
T208
P202

PHONE PATCH





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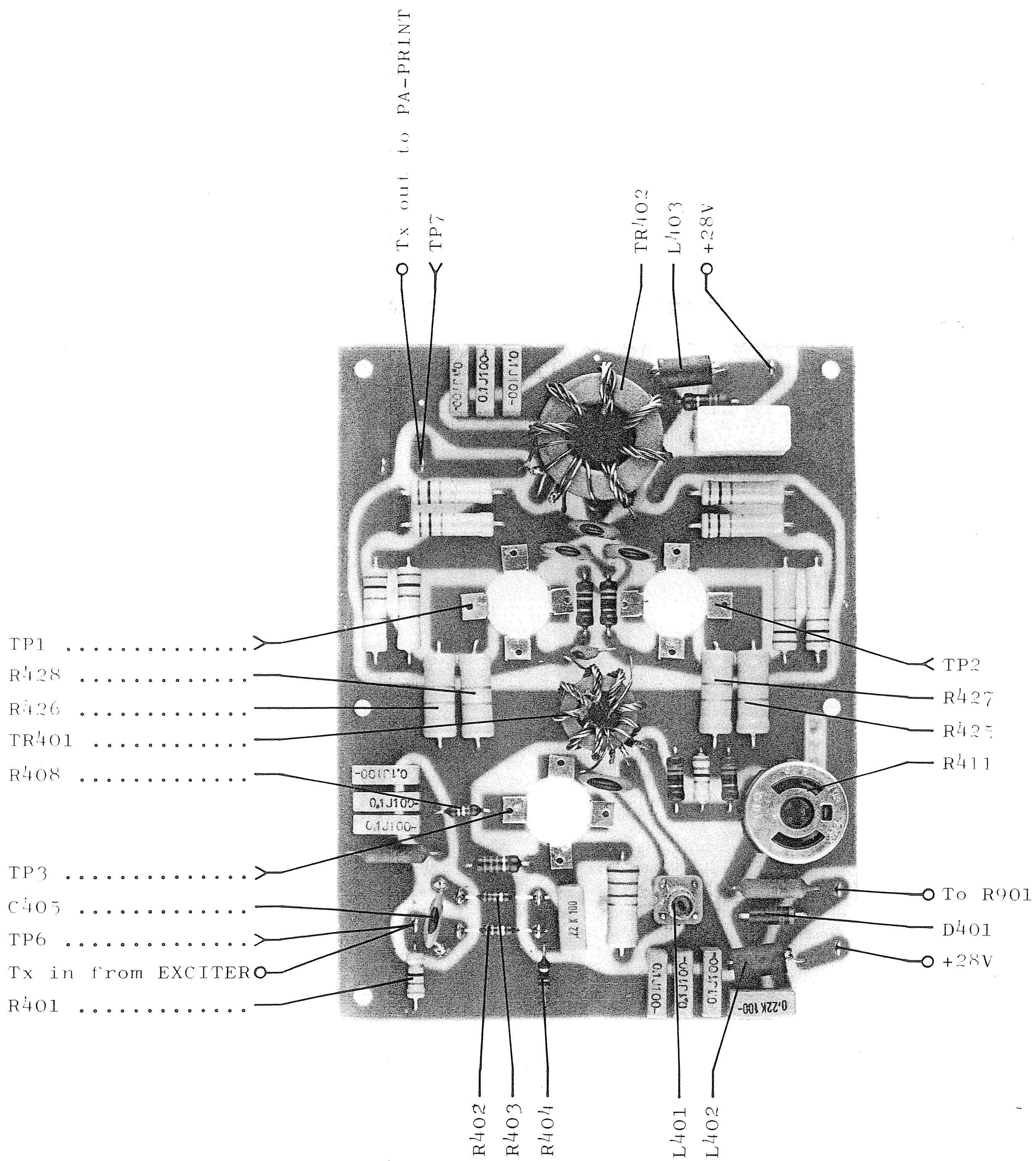
PHONE PATCH

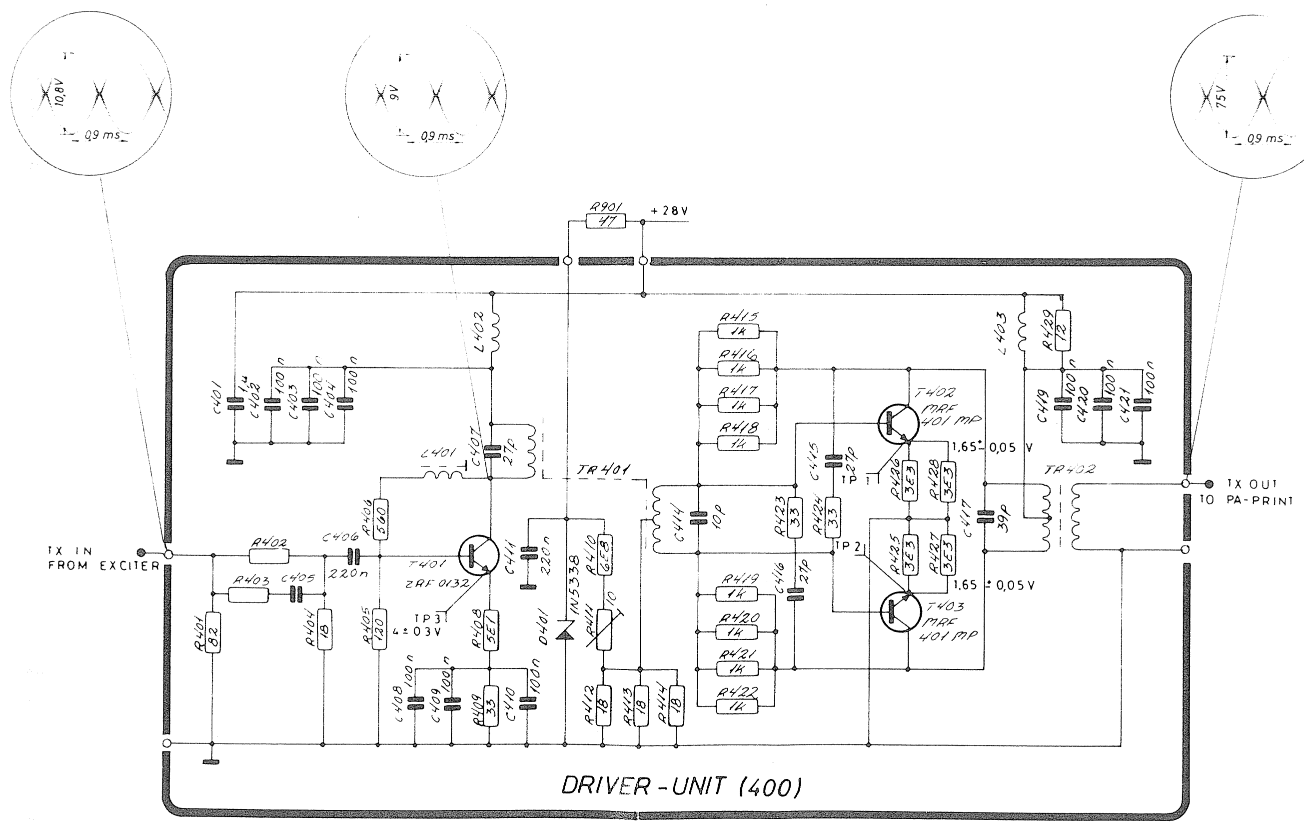


TEST CONDITIONS

Frequency	:	2 MHz or as close as possible.
Drive	:	Adjusted to zero on the testmeter.
Oscilloscope input	:	Passive probe 10 Mohm//15 pF.

TP: Testpoints

Values on oscillograms is approx. values.



CONTENTS:

A

GENERAL DESCRIPTION

INTRODUCTION

SAILOR T1127 is an*800 Watt PEP SSB transmitter.

SAILOR T1127 transmitter can be remote controlled by the SAILOR H1200 up to a distance of 200 meters. This means that the location of the radio station and the aerials can be chosen independently to ensure maximum performance.

SAILOR T1127 is simple to operate: Set frequency, tune aerial, select transmission mode. That's all. B

SAILOR T1127 can be used in conjunction with the exciters S1300 and S1301.

SAILOR T1127 is supplied from N1400 (24V DC) or N1401 (AC mains).

SAILOR T1127 fits into SAILOR 19" rack system.

* Canadian version: 750 Watt due to higher intermodulation requirements in Canada.

NOTE: When T1127 is used together with H1201 it is modified, and type number is changed to T1127L.

TECHNICAL DATA

Output power: 1.6 - 4 MHz
*400 Watt PEP in the aerial in all transmitting modes.

Output power: 4, 6, 8, 12, 16, 22 and 25 MHz bands
**800 Watt PEP in the aerial in all transmitting modes.

Number of channels:)

Frequency stability:)

Mode of operation:) Dependent on the exciter in question.

B Distress call:)

Modulation:)

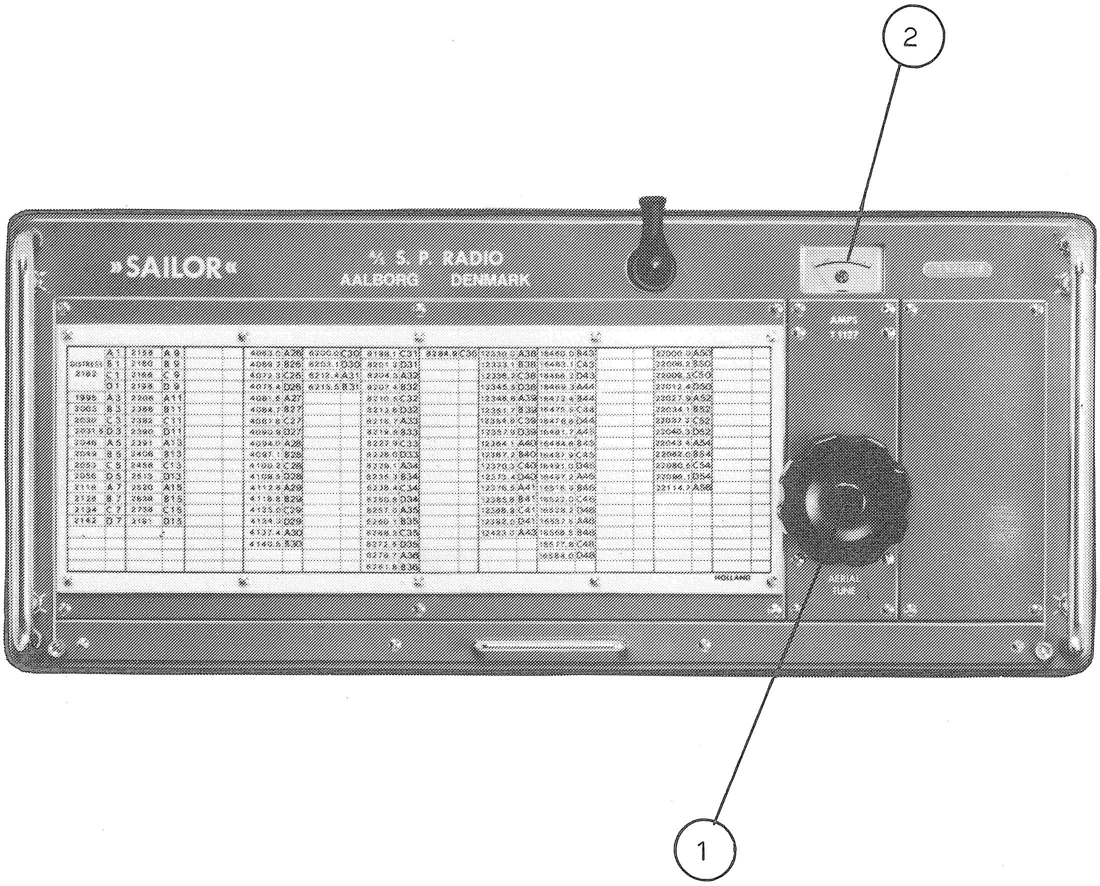
Temperature range: $-15^{o}C$ to $+55^{o}C$

Power consumption: See instruction manual for power supply N1400 or N1401.

* Canadian version: 350 Watt due to higher intermodulation requirements in Canada.

** Canadian version: 750 Watt due to higher intermodulation requirements in Canada.

CONTROLS



A

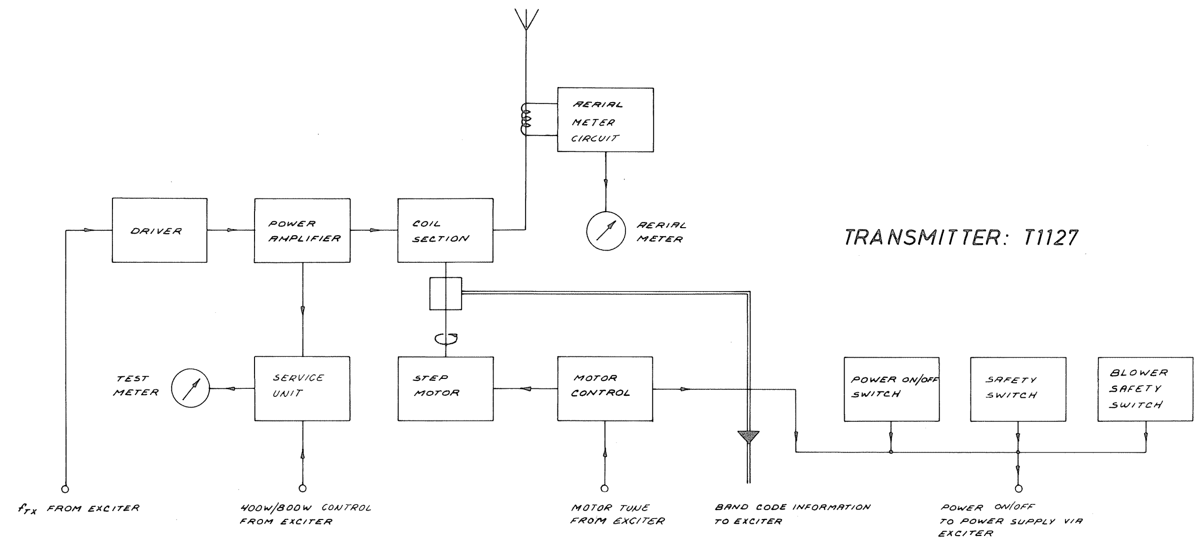
① AERIAL TUNE

After change of frequency tune the aerial by means of knob ① for max. AERIAL METER ② deflection. (Press TUNE button on the exciter).

② AERIAL METER

Shows the aerial current in Amps.

PRINCIPLE OF OPERATION



TRANSMITTER T1127

A

The signal from the exciter is first amplified in a transistorized wide-band DRIVER which operates in class A. The output of the driver is fed through a matching circuit to the power amplifier, which is composed of two beam power tetrodes connected in parallel and operates as an amplifier in class AB. The anodes are connected to the coil section, which consists of tuned circuits and aerial matching circuits. All switchings in the coil section are made by means of a motor driven drum switch.

The transmitter is tuned in 19 bands, namely 11 bands in the frequency range 1.6 - 4 MHz, the 7 short-wave bands and 1 band for special frequencies.

The motor driven drum switch has the following functions:

1. Selecting the proper anode circuit.

2. Selecting the proper aerial matching circuit.

3. Give a digital information to the exciter, which indicates the position of the drum switch.

The transmitter has a built-in TEST METER, AERIAL METER, safety and protection circuits.

TUNING-UP PROCEDURE

NECESSARY TOOLS:

1 pc. screwdriver

1 pc. alignment kit (supplied with the transmitter) comprising:

1 pc. nylon fork for locking the TUNE knob.

4 pcs. alignment tool for contact drums.

1 pc. combined alignment tool and box spanner for hexagon contact studs.

30 pcs. hexagon contact studs.

When the set has been installed as described in the manual "Mounting Instructions for SAILOR short-wave programme" both the receiver and the transmitter must be tuned for the actual aerials. As far as the receiver is concerned please see the instruction book for the receiver in question.

As far as the transmitter is concerned a step-by-step procedure is given here below, but first some general remarks.

For programming of the drum switch two types of contact studs are used:

1. Hexagon studs for programming after installation. (Load and aerial tuning).

2. Round studs for factory programming. MUST NEVER BE REMOVED.

When tuning-up procedure takes place the transmitter aerial must have the same conditions as is open sea. This means:

a. Crane derricks, booms etc. must be in the same position as when the ship is in open sea.

b. If the ship is moored it must be away from cranes on land, high buildings, bridges, other ships and any other sources of interference.

STEP-BY-STEP PROCEDURE:

Take off the two front panel covers. (see fig. 1).

Adjust zero signal current as described in SERVICE section 5.3.

<u>C.T. band 1.6 - 4 MHz:</u>

The transmitter must be tuned in all bands where frequencies are programmed. The bands and the corresponding letters, which are printed on the drum switch are tabulated on the next page.

NOTE: THIS TUNING-UP PROCEDURE IS ONLY VALID FROM SERIAL NO. 201206 AND UP.

Band MHz	Letter on the drum switch	Band MHz	Letter on the drum switch
2.182	A	2.6 - 2.7999	M
1.6 - 1.7999	B	2.8 - 3.0999	O
1.8 - 1.9999	D	3.1 - 3.3999	Q
2.0 - 2.1999	F	3.4 - 3.6999	R
2.2 - 2.3999	H	3.7 - 4.0	S
2.4 - 2.5999	K	0.4 - 0.5999	T

Always tune band A (2182 kHz distress) first.

If the transmitter has preset tuning on 2182 kHz, use paragraph 8a for band A and paragraph 8b for all other bands.

If the transmitter has manual tuning on 2182 kHz (Dutch version) use 8b for all bands inclusive band A.

C 2/5

1. Set the MAIN SWITCH to position ON.

2. Set POWER switch to pos. OFF (fig. 1). Pull forward the exciter so that it is possible to fix the TUNE button in its depressed position by wedging the nylon fork supplied, between the collar of the button and the back of the front panel. Set the POWER switch on the exciter to position FULL.

3. Find in the above table the letter which corresponds to the band in question.

4. Switch MOTOR switch (see fig. 1) between position STOP and MANUAL, until the letter concerned (row of threaded holes) faces forwards. Then remove all hexagon studs in the rows concerned.

5. Select the lowest frequency in the band.

6. Set MOTOR switch to position AUTOM. Then the drum switch turns to the correct position.

7. Establish contact between contact 47 and the drum by pressing the U-shaped metal part of the alignment tool between contact and drum (the open part of the U to be facing the drum).

   NOTE! When the alignment tool are removed or inserted, the POWER switch <u>must always</u> be in position OFF (anode voltage OFF).

8a. Preset tuning of 2182 kHz.
    Tuning of aerial coil 2182 kHz.
    Set POWER switch to pos. ON and tune AERIAL TUNE 2182 kHz (see fig. 1) for AERIAL METER peak reading. If a peak cannot be obtained then stop the transmitter and establish contact between contact 54 and the drum by means of the alignment tool. Start the transmitter and tune the AERIAL TUNE 2182 kHz for AERIAL METER peak reading.

NOTE: THIS TUNING-UP PROCEDURE IS ONLY VALID FROM SERIAL NO. 201206 AND UP.

8b. Tuning of aerial coil.
Establish contact between contact 54 and the drum by means of the alignment tool.
Set POWER switch to pos. ON (transmitter starts) and tune the AERIAL TUNE knob for AERIAL METER peak reading. If a peak cannot be obtained, set POWER switch to pos. OFF (transmitter stops) and remove the alignment tool from contact 54. Start transmitter and tune the AERIAL TUNE knob for AERIAL METER peak reading. If a peak cannot be obtained, stop transmitter and activate contacts 54 and 11. Start transmitter and tune the AERIAL TUNE knob for AERIAL METER peak reading. If a peak cannot be obtained stop transmitter and activate contacts 54, 11 and 13. Start transmitter and tune the AERIAL TUNE knob for AERIAL METER peak reading. If a peak cannot be obtained the aerial is either too long or too short.

NOTE! It is important to follow the above procedure to avoid the risk of tuning to the second harmonic frequency.

9. Drive level.
Set TEST SWITCH to pos. DRIVE, start transmitter and adjust the drive level potentiometer facing forwards (see fig. 1) for a TEST METER reading of 3 divisions on the right hand section of the scale.

10. Loading.
Set TEST SWITCH to pos. LOAD and check whether the TEST METER deflection is on the left hand or the right hand section of the scale.

If left hand deflection, then activate contacts from 47 to 43 both incl. to get TEST METER deflection within the scale, when AERIAL TUNE is tuned for max. AERIAL METER deflection. Then transfer the alignment tool to that contact, which gives max. AERIAL METER deflection while the TEST METER deflection is within the scale.

If right hand deflection, then activate contacts from 47 to 50 both incl. to get the TEST METER deflection within the scale, when AERIAL TUNE is tuned for max. AERIAL METER deflection. Then transfer the alignment tool to that contact, which gives max. AERIAL METER deflection while the TEST METER deflection is within the scale.

Due to interacting between load circuit and aerial coil it may be necessary to repeat point 8a or 8b.

11. Bandwidth check.
Select the highest frequency in the band and check if it is possible to tune AERIAL TUNE for AERIAL METER peak reading.

If a peak cannot be obtained then repeat point 8a or 8b on this frequency and recheck on the lowest frequency in the band.

12. Set POWER SWITCH to pos. OFF.
Note the positions of the alignment tools in the TUNING SHART T1127 enclosed in the "OPERATING INSTRUCTIONS FOR SAILOR MF/HF STATIONS".
Put hexagon studs into the threaded holes corresponding to the noted positions when the drum switch is in proper position, as described under point 4.

13. Repeat the points 3 to 12 in the remaining bands.

TUNING-UP PROCEDURE cont.:

HF bands 4, 6, 8, 12, 16, 22 and 25 MHz

When tuning-up these bands select frequencies as below (international calling frequencies) or frequencies as close as possible.

Band (MHz)	Letter on the drum switch	Frequency (MHz)
4	C	4.1250
6	E	6.2155
8	G	8.2570
12	I	12.3920
16	L	16.5220
22	N	22.0620
25	P	25.0200 x

x no calling frequency

1. Set POWER switch to pos. OFF (fig. 1) and lock the TUNE knob as described under C.T. band 1.6 - 4 MHz point 2.
   Set POWER switch on the exciter to pos. FULL.

2. Find in the above table the letter which corresponds to the band in question.

3. Switch MOTOR switch (fig. 1) between position STOP and MANUAL until the letter concerned (row of threaded holes) faces forwards.
   Then remove all the hexagon studs in the rows concerned.

4. Select frequency in the lowest HF band.

5. Set MOTOR switch to pos. AUTOM., then the drum switch turns to the correct position.

6. Establish contact between contact 47 and the drum by pressing the U-shaped metal part of the alignment tool between contact and drum (the open part of the U to be facing the drum).

   NOTE! When the alignment tool are removed or inserted, the POWER switch must always be in pos. OFF (anode voltage OFF).

7. Adjustment of aerial coil and selection of aerial capacitor.
   The aerial coil is adjusted by activating none or one of the contacts 14 to 25 incl. in such a way that increasing contact number gives increasing self-inductance. (Contacts activated by round studs excluded).

   The selection of aerial capacitor is done by means of the contact 29 (50 pF), 28 (100 pF) and 27 (200 pF) and thus gives a variation range from 50 pF to 350 pF in intervals of 50 pF. Eg. contact 27 and 29 activated results in an aerial capacitor of 250 pF.

A 4/5

8. Tuning of aerial coil and aerial capacitor.
Set POWER switch to pos. ON.
Activate contact 14 and tune AERIAL TUNE knob for AERIAL METER peak reading.
If a peak cannot be obtained then transfer the alignment tool to the next higher contact number to obtain a peak, until a contact with a round stud is reached.
If a peak still cannot be obtained then increase aerial capacitor in steps of 50 pF until it is possible.
Every time the aerial capacitor is increased repeat point 8 from the beginning.
Leave the alignment tool(s) in the contact(s).

9. Drive level.
Set TEST SWITCH to pos. DRIVE, start transmitter and adjust the drive level potentiometer facing forwards (see fig. 1) for a TEST METER reading of 3 divisions on the right hand section of the scale.

10. Loading.
Set TEST SWITCH to pos. LOAD, and check whether the TEST METER deflection is on the left hand or the right hand section of the scale.

If right hand deflection then activate contacts from 47 to 43 both incl. to get TEST METER deflection within the scale when AERIAL TUNE is tuned for max. AERIAL METER deflection. Then transfer the alignment tool to that contact which gives maximum AERIAL METER deflection while the TEST METER deflection is within the scale.

If left hand deflection then activate contacts from 47 to 50 both incl. to get the TEST METER deflection within the scale when the AERIAL TUNE is tuned for max. AERIAL METER deflection. Then transfer the alignment tool to that contact which gives maximum AERIAL METER deflection while the TEST METER deflection is within the scale.

If you end up in contact 50 then increase aerial capacitor in steps of 50 pF until max. aerial current is reached. Every time the aerial capacitor is increased repeat points 6-8-9 and 10.

If it is possible to reach the same aerial current for two different values of aerial capacitor select the lowest value.

11. Turn AERIAL TUNE for absolute maximum and repeat point 9.

12. Bandwidth check.
Select the lowest frequency in the band and check that it is possible to tune AERIAL TUNE for AERIAL METER peak reading. If a peak cannot be obtained then transfer the alignment tool located between contacts 14 - 25 one step aside to obtain a peak.

Select the highest frequency in the band and check that it is possible to tune AERIAL TUNE for AERIAL METER peak reading. If a peak cannot be obtained then transfer the alignment tool located between contacts 14 - 25 one step aside to obtain a peak.

13. Set POWER switch to pos. OFF.
Note the positions of the alignment tools in the TUNING CHART T1127 enclosed in the "OPERATING INSTRUCTIONS FOR SAILOR MF/HF STATIONS".
Put hexagon studs into the threaded holes corresponding to the noted positions when the drum switch is in proper position as described under point 3.

14. Repeat the points 2 to 13 incl. in the remaining HF bands.

15. Set TEST SWITCH to pos. Ik_1, POWER switch to pos. ON and MOTOR switch to pos. AUTOM.
Mount the two front panel covers.

TUNING-UP PROCEDURE T1127/H1200

PROCEDURE:

The tuning-up procedure for the remote-controlled transmitter is exactly the same as for the rack-mounted transmitter.

NOTE! NEVER CHANGE FREQUENCY UNLESS THE POWER SWITCH (fig. 1) IS IN POS. OFF.

When the tuning-up procedure is finished remove the AERIAL TUNE knob and the front panel cover behind and mount the remote control motor unit as described below.

Serial numbers up to 173910.

1. Set MAIN SWITCH to pos. OFF.

2. Remove the AERIAL TUNE knob.

3. Remove the front panel cover behind the AERIAL TUNE knob.

4. Remove the shaft for AERIAL TUNE knob by removing the three screws which penetrate the round iron plate riveted to the shaft.

5. Remove the flat bronze spring by means of a pair of nippers <u>without</u> loosening the fastening screws.

6. Mount the remote control motor unit and take care that the crankshaft fits into the slot in the disc. The two short screws have to be mounted beneath the AERIAL METER.

   NOTE! NEVER TURN THE CRANKSHAFT AS IT WILL DAMAGE THE GEARBOX.

7. Solder the red/orange wire and the brown/black wire for the motor to the terminals marked ^{xx} and the black wire to the terminal marked ^{xxx} at fig. 1. Take care that the wires are not trapped by the mechanics when the crankshaft is turning.

8. Remove the jumper wire between the two terminals marked ^{x} at fig. 1.

9. Set TEST SWITCH to pos. Ik_1, POWER switch to pos. ON and MOTOR switch to pos. AUTOM.
   Mount the remaining front panel covers.

From serial number 173910.

1. Set MAIN SWITCH to pos. OFF.

2. Remove the front panel cover carrying the AERIAL TUNE knob.

3. Mount the remote control motor unit and take care that the crankshaft fits into the slot in the meter disc. The two short screws have to be mounted beneath the AERIAL METER.

   NOTE! NEVER TURN THE CRANKSHAFT AS IT WILL DAMAGE THE GEARBOX.

4. Solder the red/orange wire and the brown/black wire for the motor to the terminals marked ^{xx} and the black wire to the terminal marked ^{xxx} at fig. 1. Take care that the wires are not trapped by the mechanics when the crankshaft is turning.

TUNING-UP PROCEDURE T1127/H1200 cont.:

5. Remove the jumper wire between the two terminals marked x at fig. 1.

6. Set TEST SWITCH to pos. Ik_1, POWER switch to pos. ON and MOTOR switch to pos. AUTOM.
   Mount the remaining front panel covers.

Final check:

Check that the remote control motor unit is functional by tuning the transmitter from the REMOTE CONTROL UNIT H1200 in some bands.

A 2/2

SERVICE

1. MAINTENANCE

1.1.
When the SAILOR SHORT-WAVE SET type 1000 has been correctly installed, the maintenance can, dependent on the environment and working hours, be reduced to a performance check at the service workshop at intervals not exceeding 5 years. A complete performance check list is enclosed in the PERFORMANCE CHECK section.

Also inspect the antennas, cables and plugs for mechanical defects, salt deposits, corrosion and any foreign bodies.

Along with each set a TEST SHEET is delivered, in which some of the measurings made at the factory are listed. If the performance check does not show the same values as those on the TEST SHEET, the set must be adjusted as described under ADJUSTMENT PROCEDURE.

Any repair of the set should be followed by a FUNCTION CHECK of the unit in question.

2. NECESSARY TEST EQUIPMENT

T1127	N140X	S1300	R1117		
X	X	X	X	<u>OSCILLOSCOPE</u>:	
				Bandwidth	0-25 MHz
				Sensitivity	2mV/cm
				Input impedance	1 Mohm/30 pF
				Triggering	EXT-INT-ENVELOPE
				E.g. PHILIPS	PM3212
X		X	X	<u>PASSIVE PROBE</u>:	
				Attenuation	10x
				Input resistance DC	10 Mohm
				Input capacitance	15 pF
				Compensation range	10 pF - 30 pF
				E.g. PHILIPS	PM 9396
		X	X	<u>MULTIMETER</u>:	
				Sensitivity (f.s.d.)	1V
				Input impedance	10 Mohm
				Accuracy (f.s.d.)	±2%
				E.g. PHILIPS	PM2503
X	X			<u>MULTIMETER</u>:	
				Sensitivity	0.3V and 3A
				Input impedance	30 Kohm/V
				Accuracy (f.s.d.)	±1%
				Current range	100A
				Voltage range	500V and 2.5 kV
				E.g. Unigor A43, with probe and shunt	

NECESSARY TEST EQUIPMENT cont.:

T1127	N140X	S1300	R1117	Equipment	
		X		**TONEGENERATOR:**	
				Frequency range	200 - 3000 Hz
				Output	1V RMS
				Output impedance	≦ 600 ohm
				E.g. PHILIPS	PM5107
			X	**AF VOLTMETER:**	
				Sensitivity (f.s.d.)	300 mV
				Input impedance	≧ 4 ohm
				Accuracy (f.s.d.)	±5%
				Frequency range	100 Hz - 5 kHz
				E.g. PHILIPS	PM2503
		X	X	**FREQUENCY COUNTER:**	
				Frequency range	100 Hz - 40 MHz
				Resolution	0.1 Hz at f ≧ 10 MHz
				Accuracy	$1 \cdot 10^{-7}$
				Sensitivity	100 mV RMS
				Input impedance	1 Mohm
				Single period measurement	
				range	1 sec.
				resolution	1 mS
				E.g. PHILIPS	PM6611 + PM9679
			X	**SIGNAL GENERATOR:**	
				Frequency range	550 kHz - 30 MHz R1118: 100 kHz - 30 MHz
				Output inpedance	50/75 ohm
				Output voltage	1 uV - 100 mV EMF
				Modulation	AM, 30%, 1000 Hz
				E.g. PHILIPS	PM5326

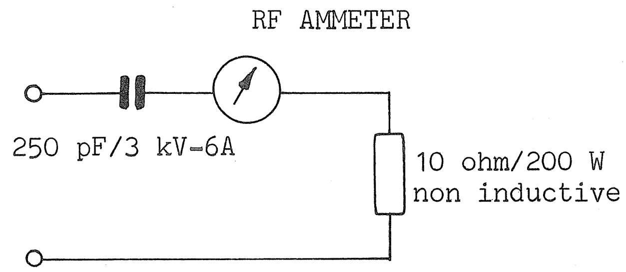
NECESSARY TEST EQUIPMENT cont.:

T1127	N140X	S1300	R1117	
				POWER SUPPLIES:
X				T1127: V_{out} 26.5V DC I_{out} 60A DC E.g. 2 pcs. LAMBDA type LMG24
		X	X	R1117/S1300: V_{out} 1 22V I_{out} 1 1.5A V_{out} 2 -45V I_{out} 2 0.2A E.g. SAILOR POWER SUPPLY type N1402
		X		TEST BOX S1300: SP type S1300/01 TEST BOX
X				POWER METER: Power range 500W E.g. Bird Thruline Wattmeter Model 43 plug-in element 500W 2-30 MHz impedance 50 ohm
X				RF-AMMETER (Thermocross): Current range 5A E.g. HELWEG MIKKELSEN & CO. Copen-hagen, Denmark type TR-68x71 5A
X		X		DUMMY LOAD for HF bands, 4 MHz to 25 MHz Impedance 50 ohm Frequency range 0-25 MHz Power range 500W E.g. BIRD Termaline Coaxial resistor Model 8401

NECESSARY TEST EQUIPMENT cont.:

T1127	N140X	S1300	R1117	
X				DUMMY LOAD for C.T. band 1.6 MHz to 4 MHz
			X	DUMMY LOAD for the C.T. band 1.6 to 4 MHz
			X	DUMMY LOAD for the HF bands 4 MHz to 25 MHz

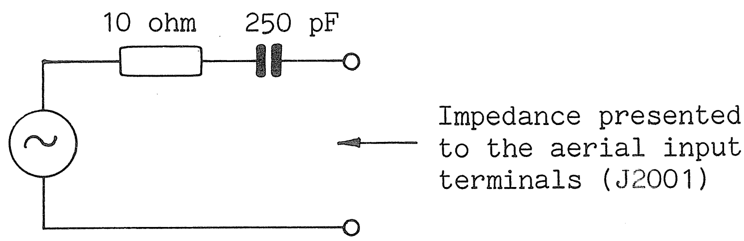
DUMMY LOAD for C.T. band 1.6 MHz to 4 MHz



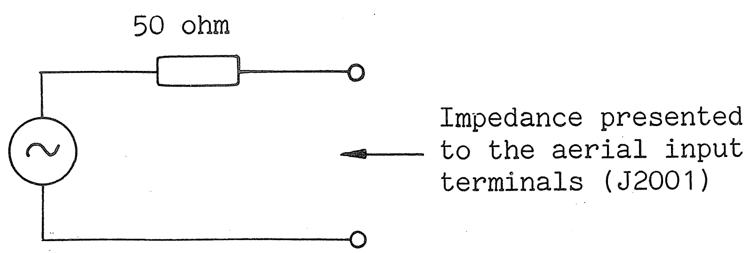
E.g. DRALORIC 06 1291 TD 20x50 L
8 KV_S 250 pF ±20% R85

E.g. 10 pcs. DALE PH-25A-17, 100 ohm 5% 25W

DUMMY LOAD for the C.T. band 1.6 to 4 MHz



DUMMY LOAD for the HF bands 4 MHz to 25 MHz



E.g. SAILOR Rx DUMMY LOAD type H219.

3. TROUBLE-SHOOTING

Trouble-shooting should only be performed by persons with sufficient technical knowledge, who have the necessary test equipment at their disposal, and who have carefully studied the operation principles and structure of the unit in question.

Start to find out whether the fault is somewhere in the antenna circuit, the power source, or in the short-wave set.

For help with trouble-shooting in the short-wave set there is a built-in test meter and test meter switch, located behind the air filter on the power supply.

When the fault has been located to a certain unit look up the PERFORMANCE CHECK list in the instruction book and make relevant performance check to incircle the fault. Then look up the CIRCUIT DESCRIPTION. This section contains schematic diagrams, description of the modules and pictures showing the location of the components. (ADJUSTMENT LOCATIONS).
Typical AC and DC voltages are indicated on the schematic diagrams.

No adjustment must take place unless the service workshop has the necessary test equipment to perform the ADJUSTMENT PROCEDURE in question.

After repair or replacement of the module look up the section NECESSARY ADJUSTMENTS AFTER REPAIR to see, whether the unit has to be adjusted or not.

Anyway the unit has to have a complete FUNCTION CHECK after repair.

4. PERFORMANCE CHECK FOR T1127

4.1.
PREPARATION AND LOCATIONS.

4.1.1.
If S1300 or S1300TT: Mount the TEST STRIPS Nos 1 to 5 incl. in the first five positions of the frequency selector in the exciter.
If S1301: Use the frequencies in brackets.

4.1.2.
Refer to fig. 2 and fig. 4.

4.2.
CHECK OF FILAMENT VOLTAGE.

4.2.1.
Set MAIN SWITCH to position STAND BY.

4.2.2.
Connect the voltmeter to TP4 and TP5.

4.2.3.
Check that the voltage is 13.5 ±1V.

4.3.
CHECK OF ZERO SIGNAL CURRENT.

4.3.1.
Select a frequency in the 4 MHz band.

4.3.2.
Set MAIN SWITCH to position ON and key the transmitter in A3J mode by means of the KEY plug.

4.3.3.
Set TEST SWITCH to position I_k1.

4.3.4.
Check that the testmeter reading is
* 3.3 ±0.3 scale div. after 5 minutes in operation.

4.3.5.
Set TEST SWITCH to position I_k2.

4.3.6.
Check that the testmeter reading is
* 3.3 ±0.3 scale div.

4.4.
CHECK OF DRIVER.

4.4.1.
Remove the high voltage plug located at the rear of the power supply, set MAIN SWITCH to position ON, TEST SWITCH to position I_k1 and key the transmitter by means of the KEY plug.

4.4.2.
Connect the voltmeter to TP3.

4.4.3.
Check that the voltage is 4 ±0.6V.

4.4.4.
Connect the voltmeter to TP1.

4.4.5.
Check that the voltage is 1.60 ±0.15V.

4.4.6.
Connect the voltmeter to TP1 and TP2.

4.4.7.
Check that the voltage is less than 60 mV.

4.4.8.
Connect the ammeter in series with the 28V supply wire.

4.4.9.
Check that the current is 2.7 ±0.2A.

4.4.10.
Set the POWER switch on the exciter to position FULL, set FREQUENCY SELECTORS to 2C (1600 kHz) and turn the drive level potentiometer fully counter clockwise.

4.4.11.
Connect 10:1 probe and oscilloscope to TP6, press TUNE button and note the peak to peak voltage.

4.4.12.
Connect 10:1 probe and oscilloscope to TP7, press TUNE button and note the peak to peak voltage.

4.4.13.
Calculate the voltage gain and check that it is within 6.3 to 7.6 (16.8 ± 0.8 dB).

* Canadian version: 4 ± 0.3 scale div. due to higher intermodulation requirements in Canada.

4.4.14.
Set TEST SWITCH to position DRIVE.

4.4.15.
Press TUNE button and adjust drive level potentiometer for a TEST METER reading of zero.

4.4.16.
Check that the envelope of the two tone signal at TP7 is undistorted.

4.4.17.
Set FREQUENCY SELECTORS to 3C (4.125 MHz), 3D (6.2155 MHz), 4A (8.257 MHz), 4B (12.892 MHz), 4C (16.522 MHz) 4D (22.062 MHz), and 5A (25.02 MHz) in turn and repeat 4.4.15 and 4.4.16.

4.4.18.
Insert the high voltage plug.

4.5.
CHECK OF MOTOR DRIVEN DRUM SWITCH.

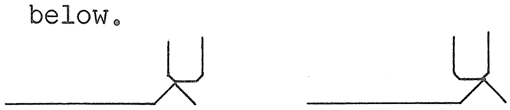
4.5.1.
Set MAIN SWITCH to position ON and POWER switch to position OFF.

4.5.2.
Pull slowly forward the arm on the microswitch until the motor is running and check that the distance x is within 18 mm to 20 mm (see fig. 2).

4.5.3.
Rotate the drum switch 360° in steps by means of the MOTOR switch. For each step check:

a) the contact position of the high voltage switch.

b) that the contact positions of the studs is within the limits shown below.



4.5.4.
Set MOTOR switch to AUTOM.

4.5.5.
Set FREQUENCY SELECTORS and check the drum positions according to the table below.

FREQUENCY SELECTOR SETTINGS		LETTER FACING THE CONTACTS
S1300 or S1300TT	S1301 MHz	
1A	3.8	S
1B	3.6	R
1C	2.9	O
1D	2.1	F
2A	2.3	H
2B	2.7	M
2C	1.7	B
2D	3.2	Q
3A	1.9	D
3B	2.5	K
3C	4.1	C
3D	6.2	E
4A	8.2	G
4B	12.3	I
4C	16.5	L
4D	22.0	N
5A	25.0	P
5D	2.182	A

4.6.
CHECK OF ANODE RESONANCE

4.6.1.
Set MAIN SWITCH to position ON and TEST SWITCH to position I_k1.

4.6.2.
Rotate the drums by means of the MOTOR switch until the letter C faces forwards.

4.6.3.
Remove the hexagon stud in one of the contacts 43 to 50 incl. and note the position.

4.6.4.
Set the MOTOR switch to AUTOM. and insert the alignment tool in contact 14.

4.6.5.
Press TUNE button and check that the TEST METER deflection is less than 5 scale div.

PERFORMANCE CHECK FOR T1127 cont.:

4.6.6.
Mount the hexagon stud in the noted position.

4.6.7.
Repeat 4.6.2. to 4.6.6. incl. according to the table below.

FREQUENCY SELECTOR SETTINGS		LETTER FACING THE CONTACTS
S1300 or S1300TT	S1301 MHz	
3C	4.125	C
3D	6.2155	E
4A	8.257	G
4B	12.392	I
4C	16.522	L
4D	22.062	N
5A	25.02	P

4.7.
CHECK OF OUTPUT POWER.

4.7.1.
Set MAIN SWITCH to position ON.

4.7.2.
Connect the dummy load to transmitter.

C.T. band: 10 ohm + 250 pF + RF ammeter.

HF bands: 50 ohm + power meter

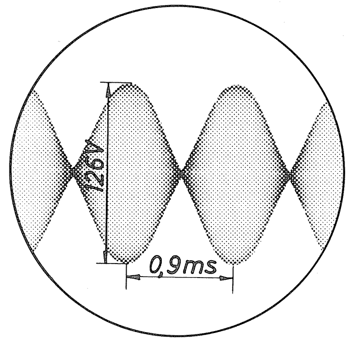
4.7.3.
Connect 10:1 probe and oscilloscope across the resistant part of the dummy load.

4.7.4.
Set FREQUENCY SELECTORS to 2A (2.3 MHz)

4.7.5.
Tune up the transmitter as described in the TUNING-UP PROCEDURE.

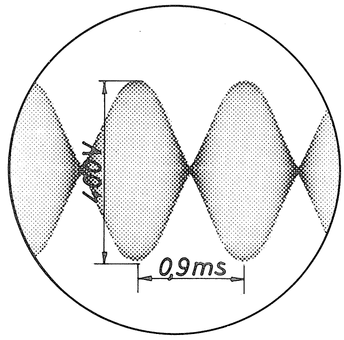
4.7.6.
Press TUNE button and check that the envelope is undistorted as shown next column.

approx.
120V



C.T. band measured across 10 ohm

approx.
400V



HF band measured across 50 ohm

4.7.7.
C.T. band:
Press TUNE button and check that RF ammeter reading is within 3A - 4.5A dependent on the supply voltage.

4.7.8.
HF bands:
Press TUNE button and check that the power meter reading is greater than 200W dependent on the supply voltage.

4.7.9.
Repeat 4.7.2. to 4.7.8. incl. according to the table below:

FREQUENCY SELECTOR SETTINGS	
S1300 or S1300TT	S1301 MHz
2A	2.3
3C	4.125
3D	6.2155
4A	8.257
4B	12.392
4C	16.522
4D	22.062
5A	25.02

4.7.10.
Set FREQUENCY SELECTORS to 5D (2182 kHz) and connect the dummy load 10 ohm + 250 pF + RF ammeter to transmitter.

PERFORMANCE CHECK FOR T1127 cont.:

4.7.11.
Tune up the transmitter as described in the TUNING-UP PROCEDURE point 14.

4.7.12.
Key the transmitter by means of the KEY plug and check that the RF ammeter reading is greater than 2.2A dependent on the supply voltage.

4.8.
CHECK OF SAFETY SYSTEM.

4.8.1.
Set MAIN SWITCH to position ON, select a frequency, activate A3J push button and key the transmitter by means of the KEY plug.

4.8.2.
Set the test switch located behind the AIR FILTER on the power supply to position V_{driver} and check that the test meter reading is in the green area.

4.8.3.
Set POWER switch to position OFF and check that the test meter reading falls to zero. Set the POWER switch to position ON.

4.8.4.
Check that the test meter reading is in the green area. Set the MOTOR switch to position STOP and MANUAL in turn and check that the test meter reading falls to zero. Set the MOTOR switch to position AUTOM.

4.8.5.
Check that the test meter reading is in the green area. Pull forward the transmitter until SAFETY SWITCH is released, (see fig. 4) and check that the test meter reading falls to zero.

4.8.6.
Set MAIN SWITCH to position OFF and pull forward the transmitter until the BLOWER SAFETY switch is visible.

4.8.7.
Short-circuit the anodes of the PA valves to chassis, to discharge the anode voltage capacitor.

4.8.8.
Check that the BLOWER SAFETY switch is released, tin box is opened.

4.8.9.
Fasten the tin box in open position and push the transmitter back to operation position.

4.8.10.
Set MAIN SWITCH to position ON and wait approx. one minute and check that the test meter reading is zero.

4.8.11.
Repeat 4.8.6. and 4.8.7. and release the fastenings.

5. ADJUSTMENT PROCEDURE FOR T1127

5.1.
ADJUSTMENT OF FILAMENT STABILIZER.

5.1.1.
Set MAIN SWITCH to position STAND BY, and connect the voltmeter to TP4 (+) and TP5 (-).

5.1.2.
Adjust R1105 to 13.5V.

5.2.
ADJUSTMENT OF LOAD METER CIRCUIT.

5.2.1.
Set MAIN SWITCH to position ON.

5.2.2.
Connect dummy load (10 ohm + 250 pF) to the transmitter.

5.2.3.
Select the lowest frequency in C.T. band.

5.2.4.
Note the position of all hexagon studs in the row of threaded holes concerned, (see TUNING-UP PROCEDURE C.T. band, point 4), and remove all of them.

5.2.5.
Activate contact 43 by means of the alignment tool.

5.2.6.
Set test meter switch behind the AIR FILTER in power supply to position V_{g2}.

5.2.7.
Tune aerial coil as described in TUNING-UP PROCEDURE C.T. band point 8.

5.2.8.
Adjust drive level: refer 5.4.

5.2.9.
Tune AERIAL TUNE for max. AERIAL METER deflection and note the V_{g2} reading.

5.2.10.
Transfer the alignment tool to the next number up and repeat 5.2.8. to 5.2.10. until V_{g2} decreases.

5.2.11.
Transfer the alignment tool to the previous number.

5.2.12.
Check drive level and tune AERIAL TUNE for max. AERIAL METER deflection.

5.2.13.
Set TEST SWITCH in position LOAD and adjust R601 (fig. 2) for a test meter reading of zero.

5.2.14.
Remount the hexagon studs (5.2.4.).

5.2.15.
Select 4125 kHz and connect 50 ohm's dummy load to the transmitter.

5.2.16.
Note the position of all hexagon studs in the row of threaded holes concerned, (see TUNING-UP PROCEDURE HF bands, point 3), and remove all of them.

5.2.17.
Activate contact 50 by means of the alignment tool.

5.2.18.
Tune aerial coil as described in TUNING-UP PROCEDURE HF bands point 8 .

5.2.19.
Adjust drive level: refer 5.4.

5.2.20.
Tune AERIAL TUNE for max. AERIAL METER deflection and note the V_{g2} reading.

5.2.21.
Transfer the alignment tool to the next number down, and repeat 5.2.19. to 5.2.21. until V_{g2} decreases.

5.2.22.
Transfer the alignment tool to the previous number.

5.2.23.
Check drive level and tune AERIAL TUNE for max. AERIAL METER deflection.

5.2.24.
Set TEST SWITCH in position LOAD, and adjust R602 (fig. 2) for a test meter reading of zero.

5.2.25.
Remount the hexagon studs (5.2.16).

5.3.
ADJUSTMENT OF ZERO SIGNAL CURRENT.

5.3.1.
Set TEST SWITCH to position I_{K1}.

5.3.2.
Turn R606 and R607 fully counter clockwise (fig. 2).

5.3.3.
Key transmitter in A3J mode by means of the KEY plug.

5.3.4.
Adjust R606 for a TEST METER reading of*3.3 div.

5.3.5.
Set TEST SWITCH to position I_{K2} and adjust R607 for a TEST METER reading of*3.3 div.

5.4.
ADJUSTMENT OF DRIVE LEVEL.

5.4.1.
Set TEST SWITCH to position DRIVE and POWER switch on the exciter to position FULL.

5.4.2.
Press TUNE button.

5.4.3.
Adjust drive level potentiometer for a TEST METER reading of 3 div.

5.5.
ADJUSTMENT OF AERIAL METER.

5.5.1.
Connect dummy load in series with an RF-ammeter to the transmitter (10 ohm + 250 pF).

5.5.2.
Select a frequency close to 2 MHz.

5.5.3.
Key transmitter in A3H mode by means of the KEY plug.

5.5.4.
Adjust R705 (fig. 2) for an AERIAL METER reading equal to the RF-ammeter reading.

5.6.
ADJUSTMENT OF COIL SECTION.

NOTE: ANODE VOLTAGE 2kV IS PRESENT AT THE COILS WHEN BOTH THE MAIN SWITCH AND POWER SWITCH ARE IN POSITION ON. The location of the coils is shown on fig. 5 and fig. 6.

5.6.1.
Set MAIN SWITCH to position ON, POWER switch to position OFF and TEST SWITCH to position I_{K1}.

5.6.2.
Select a frequency in the lowest band in question.

5.6.3.
Remove the hexagon stud in one of the contacts 43 - 50 incl. and note the contact number.

5.6.4.
Activate contact 14 by means of the alignment tool.

5.6.5.
Set POWER switch to position ON. Press TUNE button and note the TEST METER reading.

5.6.6.
Set POWER switch to position OFF, and short-circuit RF GROUND to chassis by means of a screwdriver (see fig. 5).

* Canadian version: 4 div. due to higher intermodulation requirements in Canada.

5.6.7.: 4-6-8 MHz bands.
Transfer the adj. wire in question (see fig. 6) to neighbour tap on the coil. Remove the screwdriver.

5.6.8.
Repeat 5.6.5., 5.6.6. and 5.6.7. searching for that tap which gives minimum TEST METER deflection.
The TEST METER deflection must be less than 5 scale div.

5.6.9.
Put the hexagon stud into the noted contact (5.6.3.).

5.6.10.
Repeat 5.6.1. to 5.6.9. incl. for the remaining higher frequency bands, e.g. the 4 MHz band has been adjusted, then repeat the procedure on 6 MHz and 8 MHz band.

5.6.11.
Carry out 5.6.12. to 5.6.17.

5.6.12.: 12-16-22-25 MHz bands.
Repeat 5.6.1. to 5.6.6. incl.

5.6.13.
Release the screw in the adjustment core and move it slightly in or out the coil. Remove the screwdriver.

5.6.14.
Repeat 5.6.5., 5.6.6. and 5.6.13. searching for that core position which gives minimum TEST METER deflection.

5.6.15.
Repeat 5.6.6.
Tighten the screw in the adjustment core and put the hexagon stud into the noted contact (5.6.3.).

5.6.16.
Repeat 5.6.12. to 5.6.15. incl. For the remaining higher frequency bands, e.g. the 16 MHz band has been adjusted, then repeat the procedure on 22 MHz and 25 MHz.

5.6.17.
Due to interaction in the 22 MHz and 25 MHz band. Check that the TEST METER deflection is less than 5 scale div. in the 22 MHz band. If not then repeat 5.6.12. to 5.6.15. in both the 22 MHz and 25 MHz band until the TEST METER reading is less than 5 scale div.

5.7.
ADJUSTMENT OF MOTOR DRIVEN DRUM SWITCH.

5.7.1.
Set MAIN SWITCH to position ON.

5.7.2.
Set POWER switch to position OFF.

5.7.3.
Set MOTOR switch to position STOP.

5.7.4.
Pull slowly forward the arm on the microswitch until the motor starts running and measure the distance x (see fig. 2). The distance x must be within 18 mm to 20 mm. To adjust x bend the arm of the microswitch.

5.7.5.
Adjustment of the upper drum.
Remove all the four screws in the sector disc (see fig. 5).

5.7.6.
Fix the drum and rotate the sector disc two steps forward by means of the MOTOR switch.

5.7.7.
Adjust the drum so that the brass-bar on the high voltage switch (see fig. 5) stands on the top of the contact springs.

5.7.8.
Mount one allen screw and drill a cone in the shaft with a 3.5 mm drill through the other threaded hole and mount an allen screw.

5.7.9.
Rotate the drum and drill cones and mount the two remaining allen screws.

5.7.10.
Adjustment of lower drum is only necessary when the drum has been replaced.

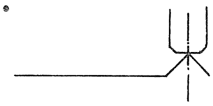
5.7.11.
Check that the adjustment of the upper drum is correct (see 5.7.7.).

5.7.12.
Rotate the lower drum until the letter E faces the contact springs. Never rotate the drums by means of the contact studs.

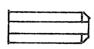
ADJUSTMENT PROCEDURE FOR T1127 cont.:

5.7.13.
Fix the lower drum and rotate the upper drum by means of the MOTOR switch until the letter E faces the contact springs.

5.7.14.
Adjust the lower drum for correct contact position.



5.7.15.
Drill a 2 mm hole in the insulator located in the right hand end of the drum and insert the spring clip supplied.



5.7.16.
Rotate the drum 180° and repeat 5.7.15.

5.8.
ADJUSTMENT OF DRIVER.

5.8.1.
Remove the high voltage plug located on the rear side of the power supply.

5.8.2.
Set MAIN SWITCH to position ON and key the transmitter in the A3J mode by means of the KEY plug.

5.8.3.
Connect the voltmeter to 28V supply wire and note the meter reading.

5.8.4.
Connect the voltmeter to TP1 and adjust R411 according to the table below.

28V supply	TP1
26 V	1.5 V
27 V	1.55 V
28 V	1.6 V
29 V	1.65 V
29.4 V	1.68 V

5.8.5.
Connect the voltmeter to TP1 and TP2 and check that the voltage is less than 60 mV.

5.8.6.
Select a frequency in the 25 MHz band (how to programme see instruction book for the exciter).

5.8.7.
Set TEST SWITCH to position DRIVE, press the TUNE button and adjust drive level potentiometer for a TEST METER reading of 5 div. on the left hand section of the scale.

5.8.8.
Adjust L401 (see fig. 3) to max. TEST METER deflection and keep the TEST METER deflection on the left hand section of the scale by means of the drive level potentiometer.

5.8.9.
Seal the core and insert the high voltage plug.

6. NECESSARY ADJUSTMENT AFTER REPAIR FOR T1127

In the following paragraphs reference is made to the ADJUSTMENT PROCEDURE T1127 and PERFORMANCE CHECK T1127.

Locations: refer to fig. 2 to fig. 6. incl.

6.1.
COIL SECTION 100.
Execute 5.7., 5.6. and 4.7.

6.2.
PA-UNIT 200.
Perform the RUN-IN OF THE STATION AFTER A LONGER LAY-UP PERIOD, described in the OPERATING INSTRUCTIONS FOR SAILOR MF/HF TELEPHONY STATION.
Execute 4.2., 5.3. and 4.7.

A 1/1

6.3.
PA-PRINT 300.
Execute 4.7. in the 25 MHz band.

6.4.
DRIVER UNIT 400.
Execute 5.8. and 4.4.

6.5.
SERVICE UNIT 600.
Execute 5.3., 5.2., 4.8.1. to 4.8.3. incl. and check the MOTOR switch.

6.6.
AERIAL METER CIRCUIT 700.
Execute 5.5.

6.7.
DRIVE LEVEL UNIT 1000.
Execute 5.4. in all bands.

6.8.
FILAMENT STABILIZER 1100.
Execute 5.1.

7. FUNCTION CHECK FOR T1127

NECESSARY TEST EQUIPMENT:

SAILOR TEST STRIPS No. 2, 4 and 5.
DUMMY LOAD: 10 ohm + 250 pF.
DUMMY LOAD: 50 ohm.

PREPARATIONS:

1.
If S1300 or S1300TT:
Place test strip No. 2 in position 2 of the frequency selector in the exciter and so on with strip No. 4 and No. 5.
If S1301:
Use the frequency in brackets.

2.
Take off the two front panel covers.

3.
Connect dummy load 10 ohm + 250 pF.

FUNCTION CHECK:

7.1.
Set MAIN SWITCH to position ON.

7.2.
Set FREQUENCY SELECTORS to position 4C (4.125 MHz).

7.3.
Set TEST SWITCH to position I_{K1}.

7.4.
Select A3J mode and key the transmitter by means of the KEY plug.

7.5.
Check that the TEST METER reading is* 3.3 ± 0.3 scale div.

7.6.
Set TEST SWITCH to I_{K2} and check that the TEST METER reading is* 3.3 ± 0.3 scale div.

7.7.
Set FREQUENCY SELECTORS to position 2C (1.7 MHz).

7.8.
Tune up the transmitter as described in TUNING-UP PROCEDURE C.T. band and check that the AERIAL METER reading is greater than 2.5A.

7.9.
Connect dummy load 50 ohm.

7.10.
Set FREQUENCY SELECTOR to 4C (16.522 MHz).

7.11.
Tune up the transmitter as described in TUNING-UP PROCEDURE HF bands and check that the AERIAL METER reading is greater than 2.5A.

7.12.
Set TEST SWITCH to position I_{K1}, POWER switch to position ON and MOTOR switch to position AUTOM.

7.13.
Mount the two front panel covers.

* Canadian version: 4 ± 0.3 scale div. due to higher intermodulation requirements in Canada.

8. MECHANICAL DISASSEMBLING FOR T1127

8.1.
REPLACEMENT OF PA-PRINT.

8.1.1.
Unscrew the screws marked * on fig. 4.

8.1.2.
Press the anode feed-through up. (fig. 4).

8.1.3.
It is now possible to tilt the PA-chassis out.

8.2.
REPLACEMENT OF DRUM SWITCHES.

8.2.1.
Set MOTOR switch to position MANUAL.

8.2.2.
Set POWER switch to position OFF.

8.2.3.
Remove the top cover of T1127.

8.2.4.
Unsolder the blue wire on the motor.

8.2.5.
Set MAIN SWITCH to position ON.

8.2.6.
Short-circuit RF ground to chassis by means of a screwdriver to discharge the anode capacitor.

8.2.7.
By means of the blue wire, make the motor stop between two positions. Note the letter which faces downwards.

8.2.8.
Unscrew the screws ** on fig. 4.

8.2.9.
Remove the left side cover.

8.2.10.
It is now possible to pull out the drums, the shafts will remain in the transmitter.

8.2.11.
When reassembling, put the drums on to the shafts. Make sure that the correct letter faces downwards.

NOTE: The upper drum has two possible positions, but only one correct. The lower drum has thirty possible positions, but only one correct.

If new drum switches are mounted see 5.7.

8.3.
REPLACEMENT OF BLOWER.

8.3.1.
Unscrew the screws marked * on fig. 3.

8.3.2.
Remove the right side cover.

8.3.3.
Unsolder the blower wires on the filter-print.

8.3.4.
Unscrew the screw marked*** on fig. 3.

8.3.5.
Unscrew the four screws which retain the blower.

8.3.6.
It is now possible to take out the blower.

8.4.
REPLACEMENT OF DRIVE LEVEL UNIT.

8.4.1.
Remove the top cover of T1127.

8.4.2.
Unscrew the screws marked * on fig. 3.

8.4.3.
Remove the right side cover.

8.4.4.
Unscrew the screws marked * on fig. 2.

8.4.5.
Remove the front plate.

8.4.6.
Unscrew the screws marked ** on fig. 3. and fig. 2.

8.4.7.
Unscrew the two allen screws which retain the drive level unit.

8.4.8.
It is now possible to pull out the unit.

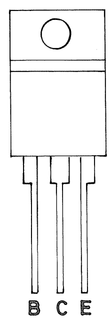
8.5.
REPLACEMENT OF MOTOR.

8.5.1.
Disconnect the wires to the motor.

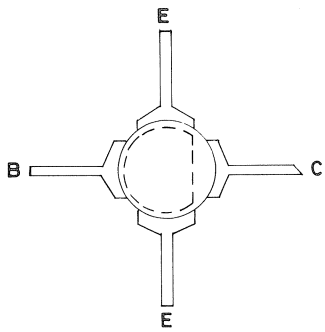
8.5.2.
Unscrew the four screws which retain the motor (see fig. 5).

8.5.3.
It is now possible to take out the motor.

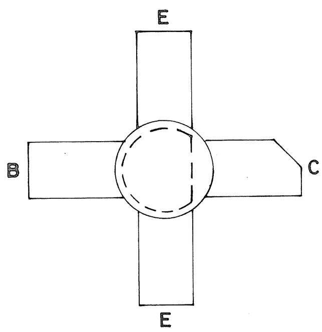
TOP VIEW



BD 241 A

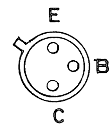


ZRF 0132

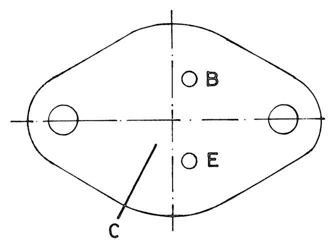


MRF 401 mp

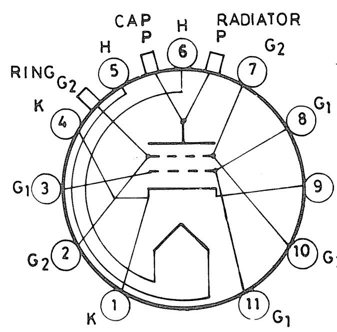
BOTTOM VIEW



BC 141 - 10



MJ 802



8122

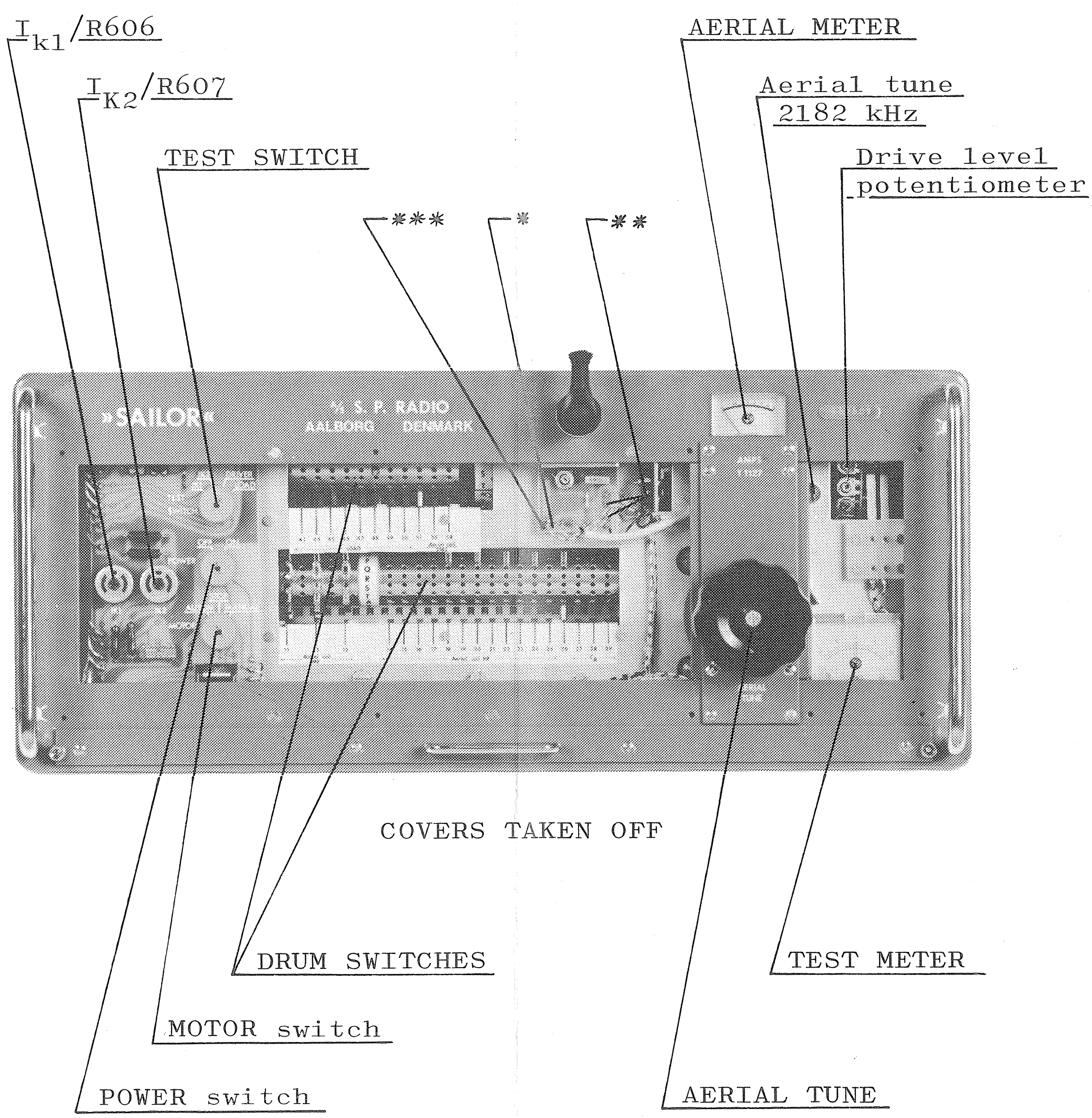


FIG. 1. TUNING FACILITIES T1127

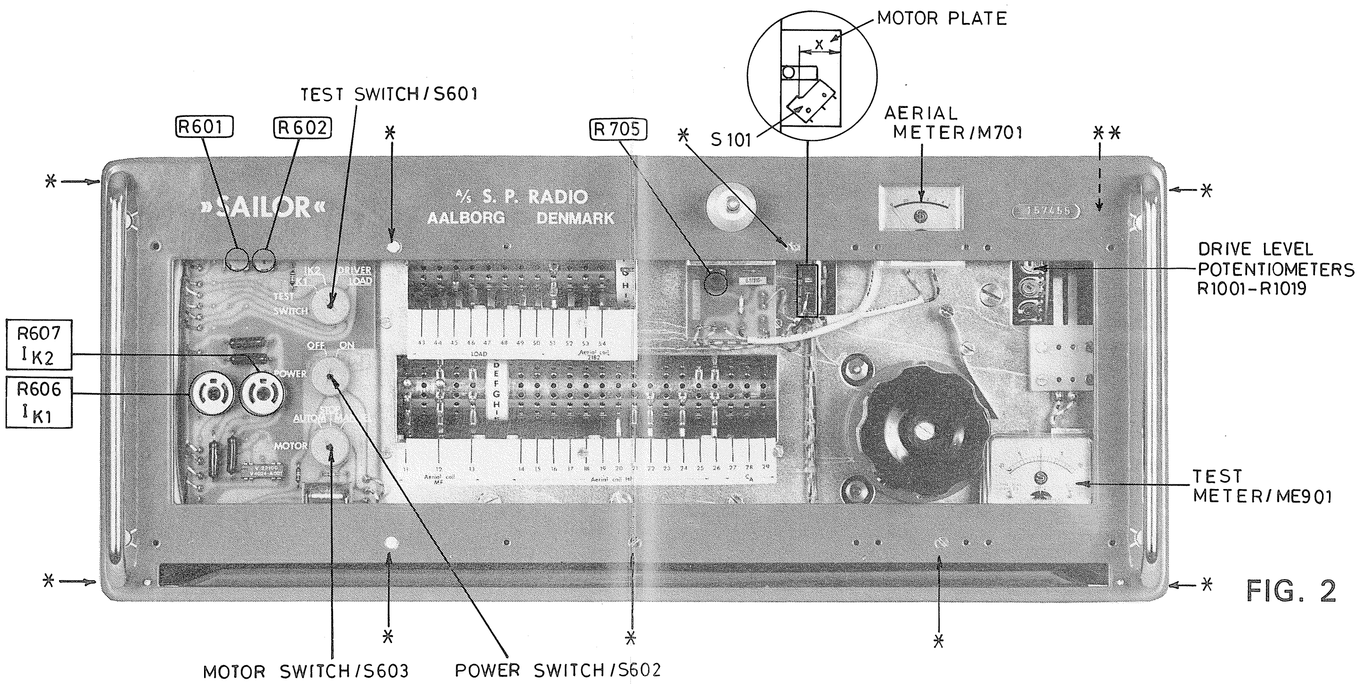


FIG. 2

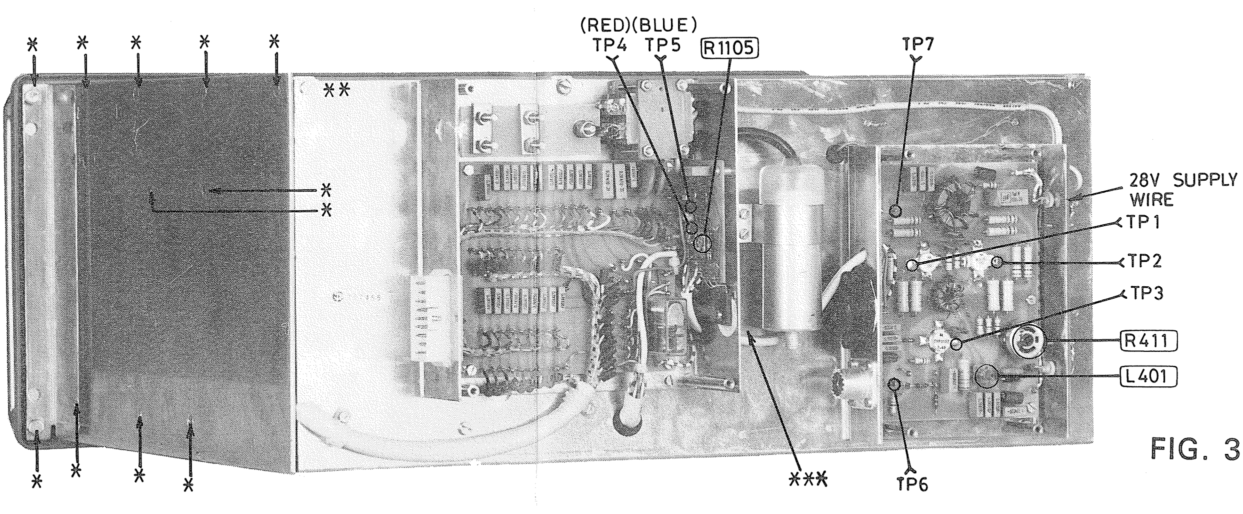


FIG. 3

ADJUSTMENT- and MECHANICAL LOCATIONS FOR T1127

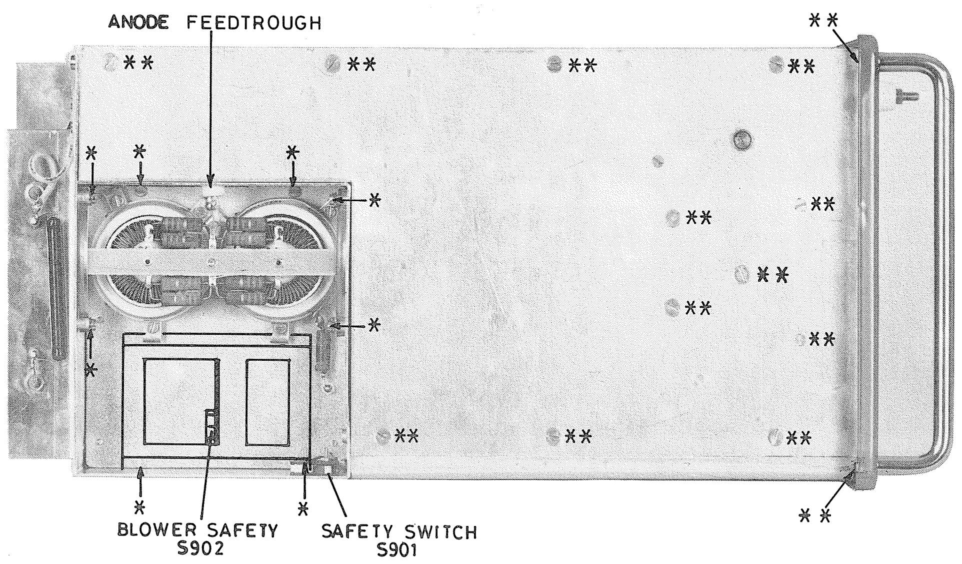


FIG. 4

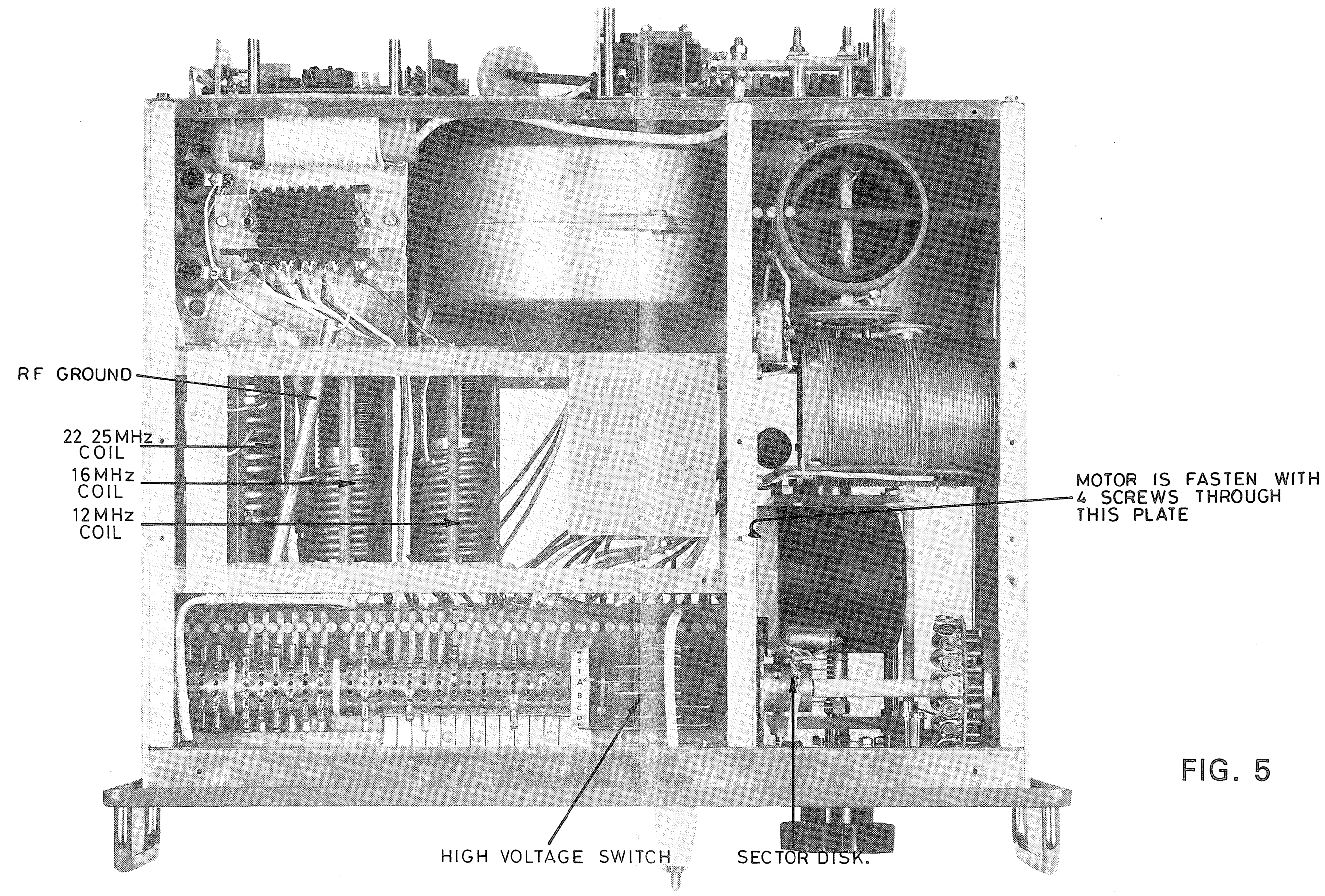


FIG. 5

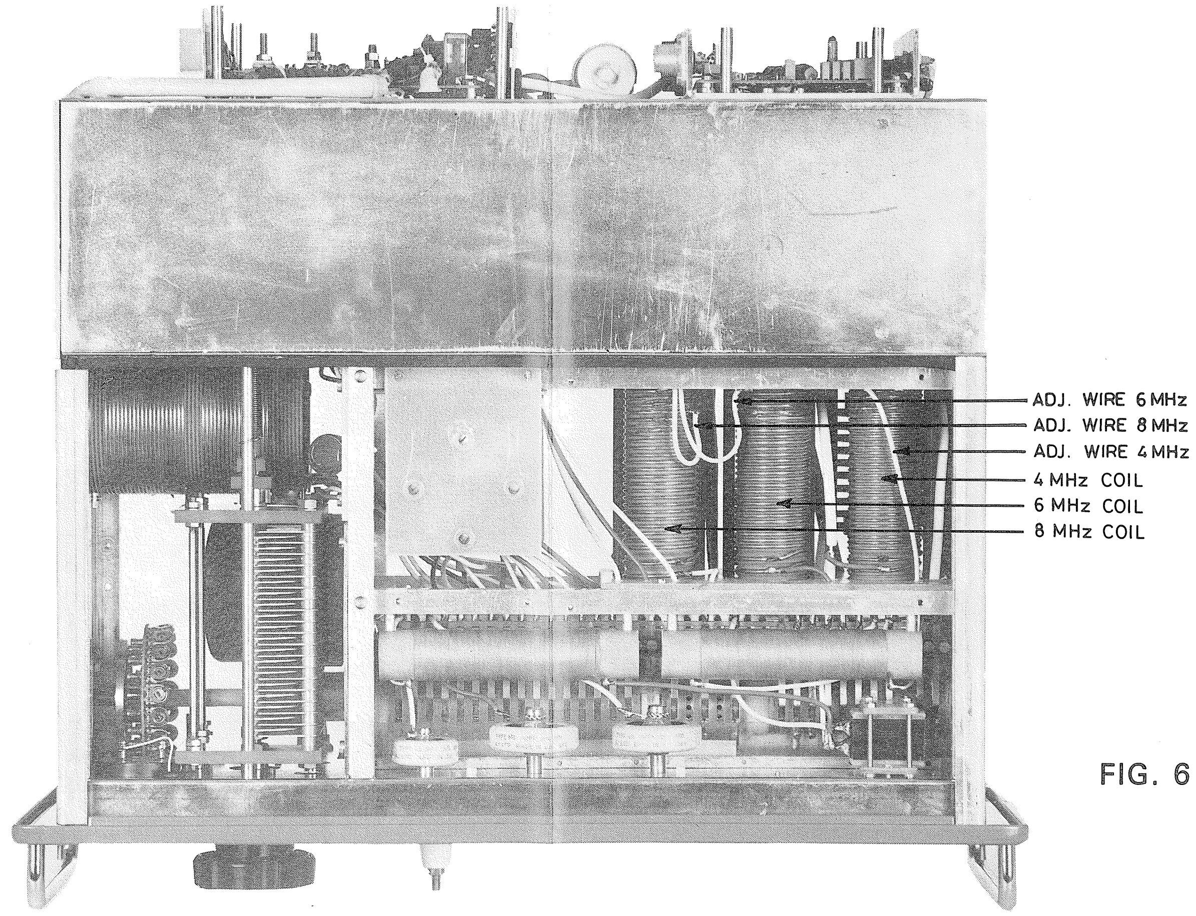


FIG. 6

ADJUSTMENT- and MECHANICAL LOCATIONS FOR T1127

CIRCUIT DESCRIPTION COIL SECTION T1127

COIL SECTION

To obtain max. performance over the entire frequency range, the anode load configuration is built-up as follows:

1.6 - 4 MHz

In this frequency range the anode circuit consists of an L-type network. The L-type network consists of the loading capacitors C101 - C110 and the variometers L110 and L111. On the frequency 2182 kHz (distress) the variometer L109 (Pre-set) is used.

The entire frequency range (1.6 - 4 MHz) is split up in 11 bands (2182 incl). For each of these bands it is possible to perform aerial tuning. Resonance is obtained by means of the contacts 11 and 13 (2182: 53 and 54), whereas the loading is made by selecting one of the contacts 43 - 50 incl.

4 - 6 - 8 - 12 and 16 MHz bands

The anode load in these bands consists of a parallel circuit. In the 4 MHz band L106 and C101 to C110 are used to form a parallel circuit. In the 6 MHz band the coil consists of L106 in parallel with L105. In the 8 MHz band the coil consists of L106 in parallel with L105 and L104, and so on up to 16 MHz incl. The correct anode load is obtained by activating one of the contacts 43 - 50 both incl.

The aerial is brought into resonance by means of the variable capacitor C114 and by selecting a suitable part of the aerial coil L112 (the contacts 14 - 26 incl.). If the ohmic part of the aerial cannot be tuned by means of the load contacts 43 - 50 incl., impedance match is then obtained with the aerial capacitors C118, C119 and C120.

22 and 25 MHz bands

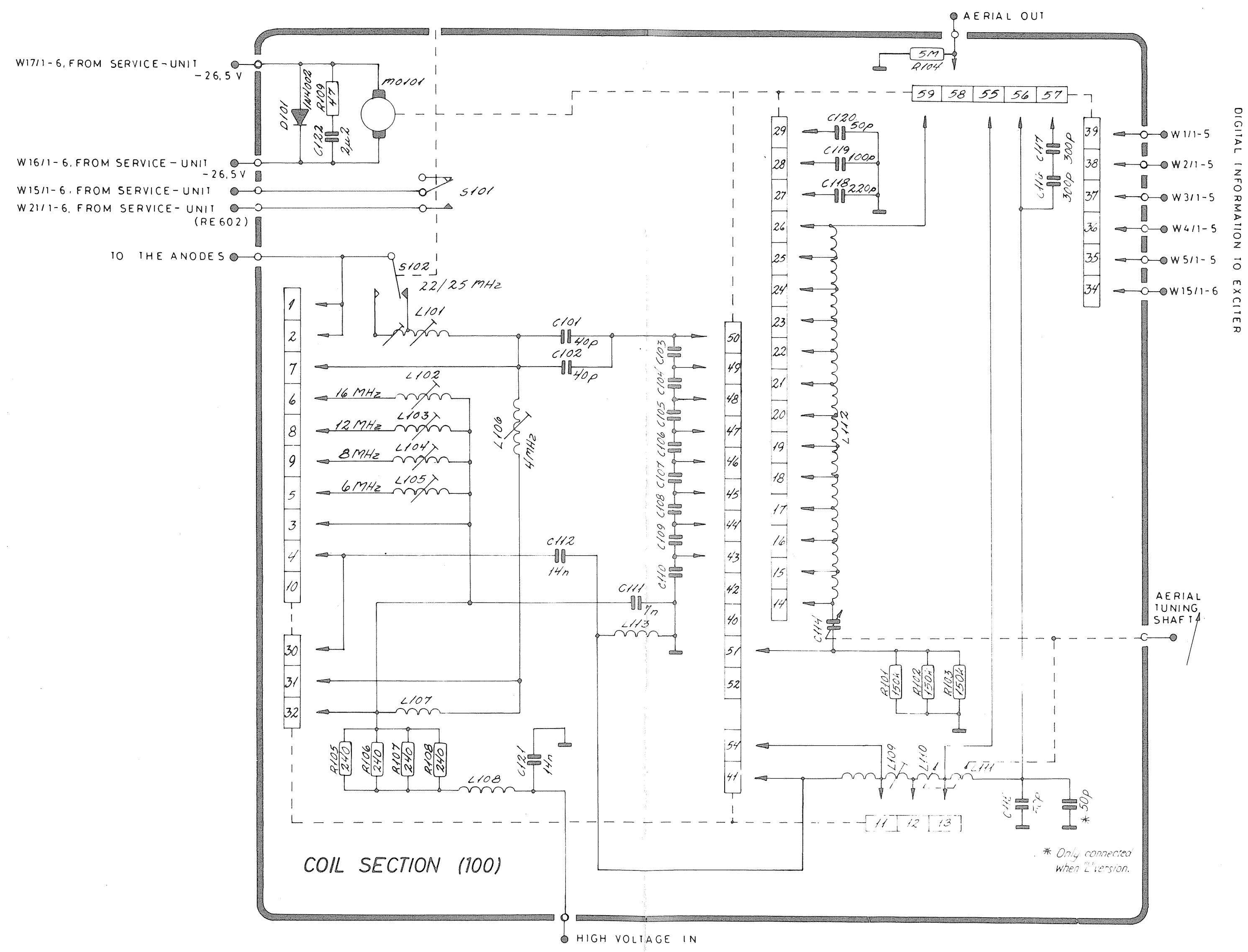
The anode load in these bands consists of a complete pi-network. The input capacitor of the pi-network consists of the inner anode capacity and the stray capacities. The output capacitor and coil are C101 - C110 incl. and L101. As the anode choke the 4 MHz tuning coil L106 is used.

The aerial circuit is the same as described for the 4-6-8-12 and 16 MHz bands.

T1127L

400 - 599.9 kHz

In this frequency range the anode voltage swing is sent directly to the aerial horn at the front of T1127.



CIRCUIT DESCRIPTION POWER AMPLIFIER T1127

POWER AMPLIFIER

The power amplifier consists of two beam power tetrode tubes RCA 8122 in parallel. The anodes are coupled directly in parallel, whereas all other electrodes are supplied from independent circuits. This means that if one tube is defective the other tube will still be operative, and the transmitter will still operate.

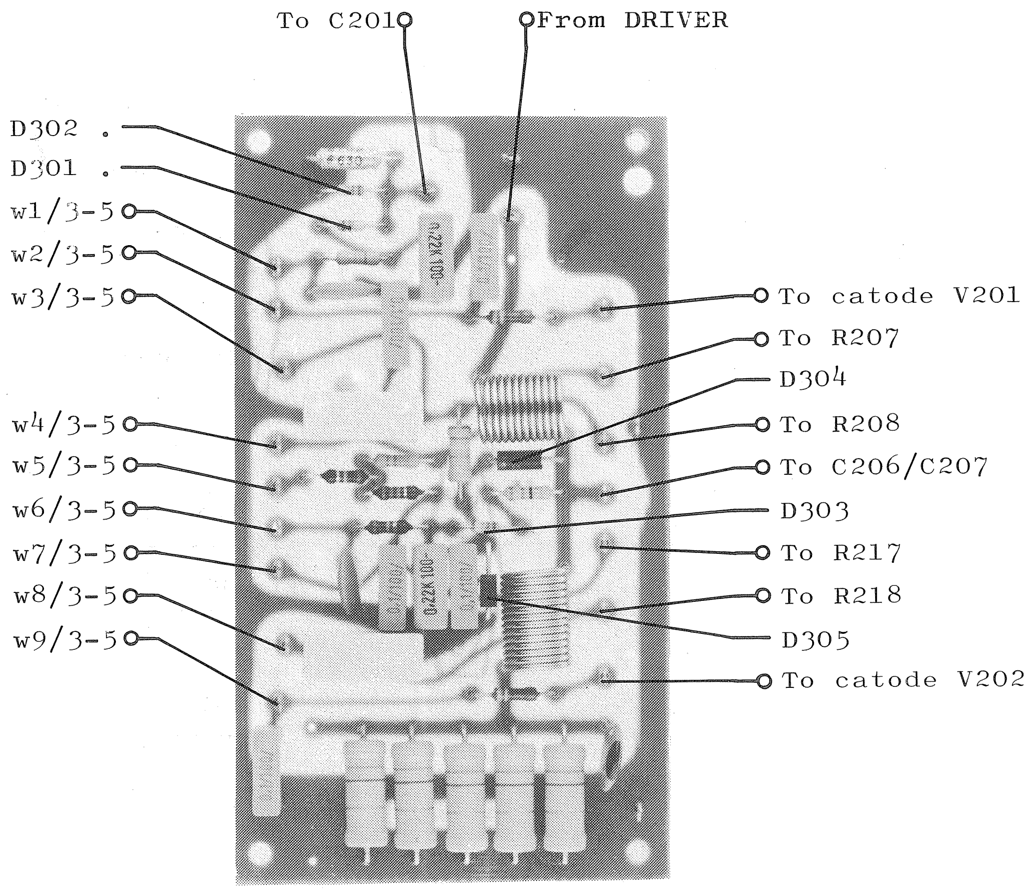
There is made difference protecting circuits to protect the tubes and the driver. In the anode supply there is 60 ohm (R105 to R108) in order to limit the plate peak current during a flash in the tubes. In the screen grid supply there is a current limiting circuit placed in the power supply. To prevent high voltage in case of a flash in the tubes, from getting into the driver, there is made a protecting circuit on the grids consisting of D304, D305, C313 and R314.

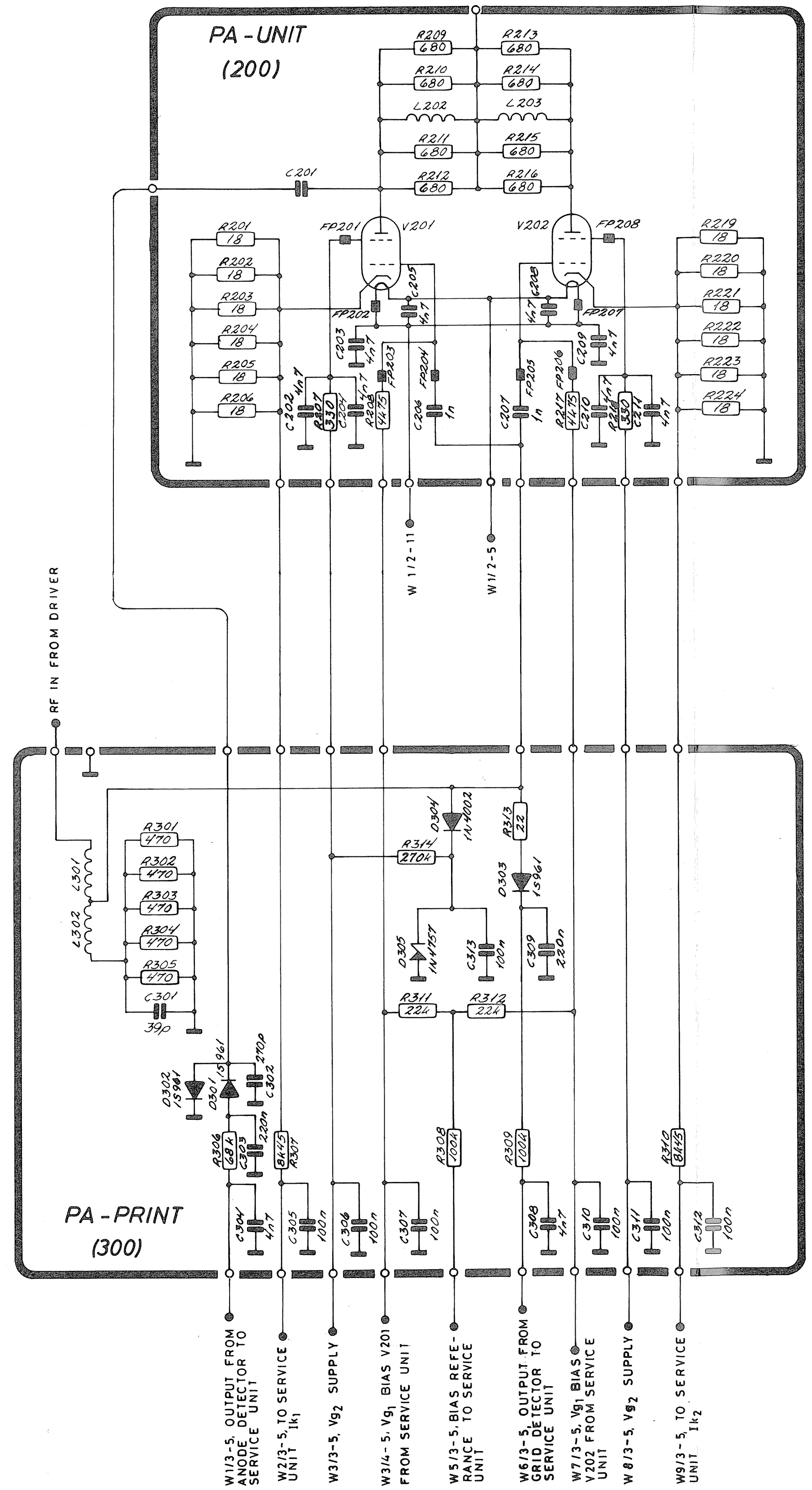
A filter is made to obtain match between the driver and the grids. The filter consists of L302, L301, C301, the coax cable from the driver to the PA-print and the input capacitance of the PA tubes. The filter is terminated with R301 to R305.

The filaments is coupled in parallel and supplied with 13.5V from the filament stabilizer.

COOLING SYSTEM

Within the transmitter there is a blower which provides the necessary cooling for the transmitter. This means that the transmitter can be mounted away from the rest of the station. Before the air flows into the transmitter it passes through an air filter located in the bottom of the transmitter. If the blower stops, a safety system will stop the transmitter, so that no components are damaged.


To C201
From DRIVER
D302
D301
w1/3-5
w2/3-5
w3/3-5
w4/3-5
w5/3-5
w6/3-5
w7/3-5
w8/3-5
w9/3-5
To catode V201
To R207
D304
To R208
To C206/C207
D303
To R217
To R218
D305
To catode V202


PA-UNIT
(200)
PA-PRINT
(300)
RF IN FROM DRIVER
W 1/2-11
W1/2-5
W1/3-5. OUTPUT FROM ANODE DETECTOR TO SERVICE UNIT
W2/3-5. TO SERVICE UNIT Ik1
W3/3-5. Vg2 SUPPLY
W3/4-5. Vg1 BIAS V201 FROM SERVICE UNIT
W5/3-5. BIAS REFERANCE TO SERVICE UNIT
W6/3-5. OUTPUT FROM GRID DETECTOR TO SERVICE UNIT
W7/3-5. Vg1 BIAS V202 FROM SERVICE UNIT
W8/3-5. Vg2 SUPPLY
W9/3-5. TO SERVICE UNIT Ik2

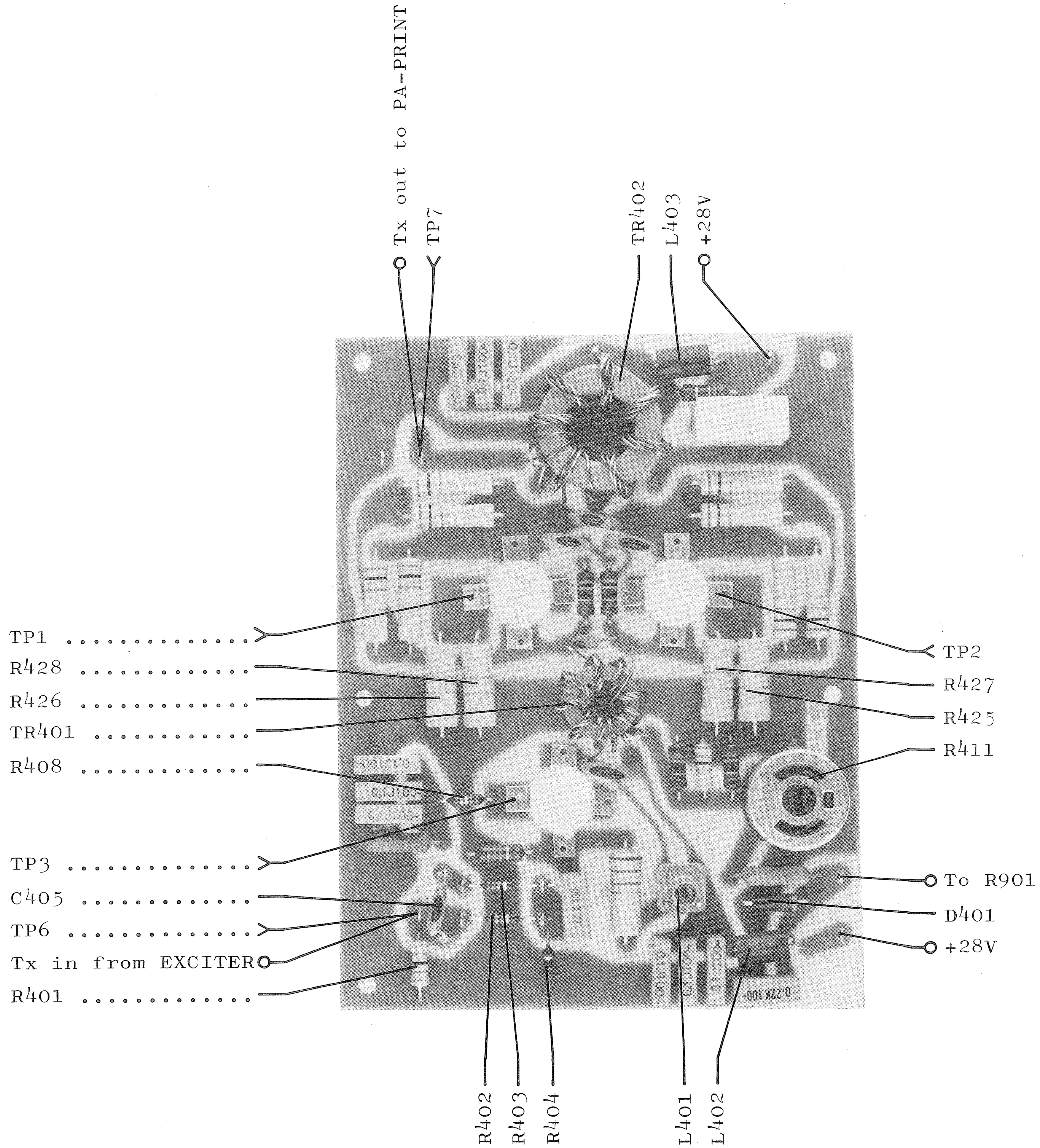
CIRCUIT DESCRIPTION DRIVER UNIT T1127

DRIVER UNIT

The driver is transistorized and covers the frequency range 0.5 - 25 MHz. It has a gain of 16.8 dB ± 0.8 dB.

At the input of the driver there is a frequency dependent attenuator consisting of R401, R402, R403, R404 and C405. The frequency dependent attenuator is used to compensate for the coax cable between the exciter and T1127, when it is a remote controlled installation. (For specific values see the table below). T401 is a class A amplifier with a feed-back consisting of L401 and R406, which stabilizes the gain over the frequency range. The first stage is coupled through a wide band transformer TR401 to the output stage. This transformer also provides the necessary phase split to the push-pull output stage. The output stage is also a class A amplifier. The D.C. bias is stabilized with D401, and adjustment of zero signal current is made by means of R411. The cross stabilization is made by R423, C416, R424 and C415. The output stage is coupled through a wide band transformer TR402 to the PA-PRINT.

Cable length	R402	R403	C405
(m)	(ohm)	(ohm)	(pF)
0 - 100	180	560	27
100 - 200	150	120	47



TEST CONDITIONS

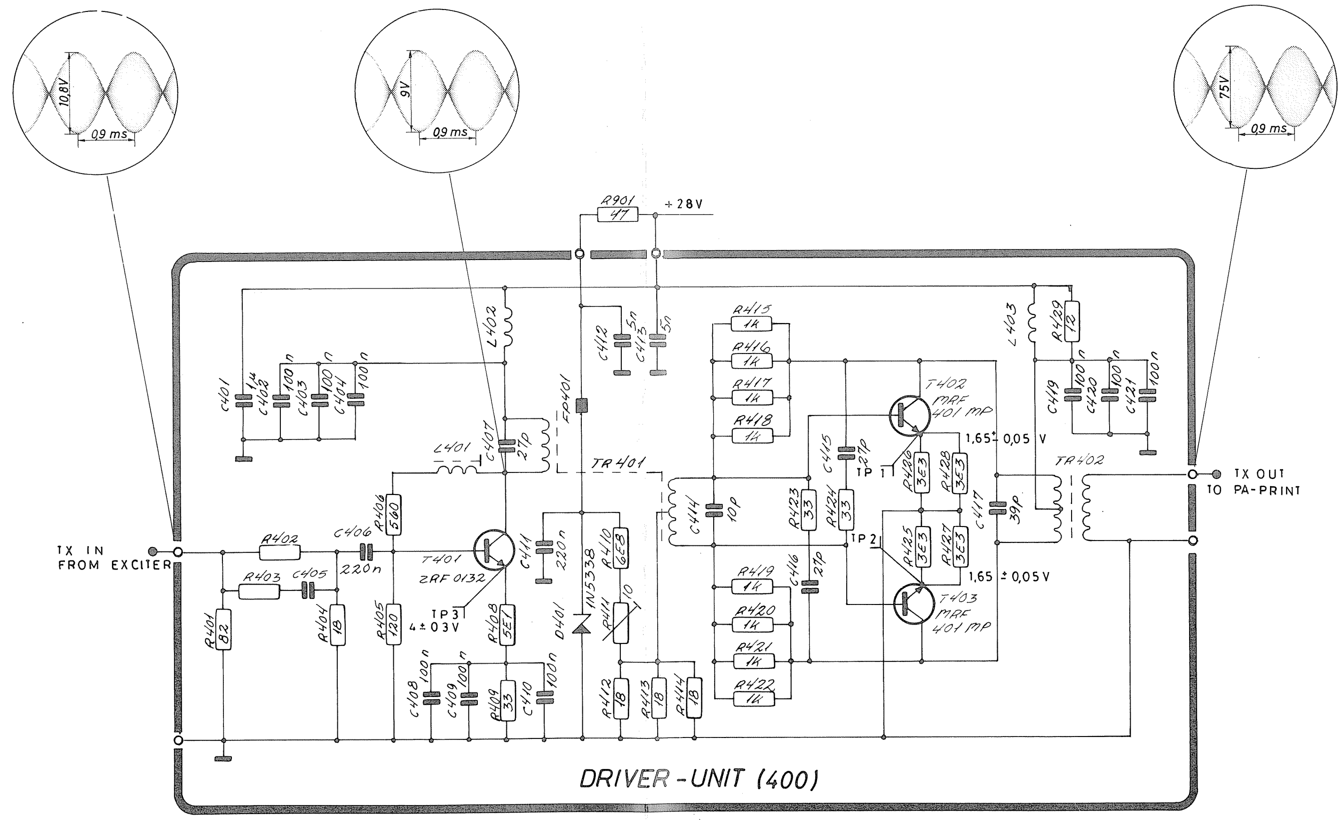
Frequency : 2 MHz or as close as possible.

Drive : Adjusted to zero on the testmeter.

Oscilloscope input : Passive probe 10 Mohm//15 pF.

TP: Testpoints

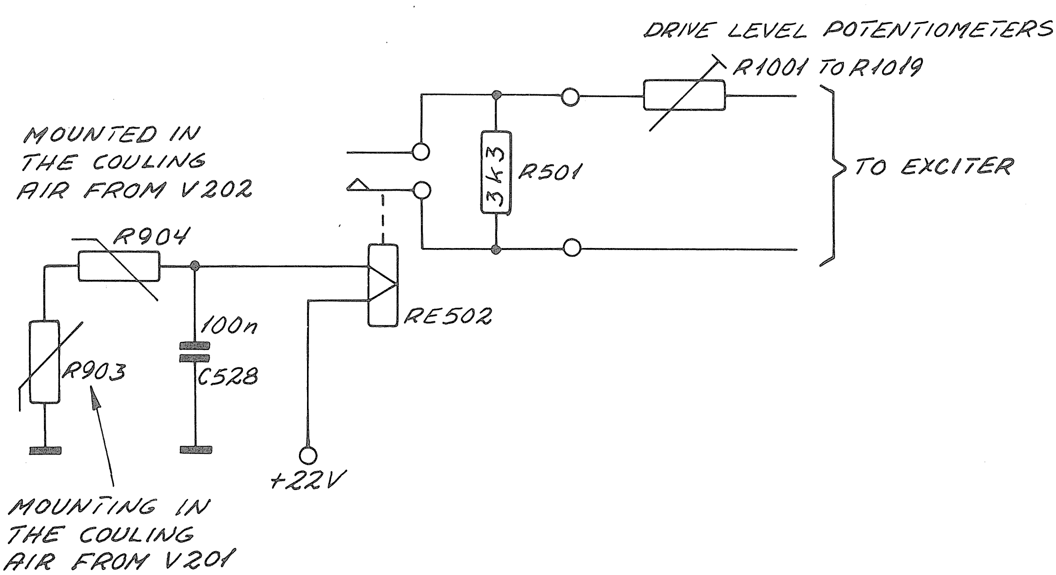
Values on oscillograms is approx. values.



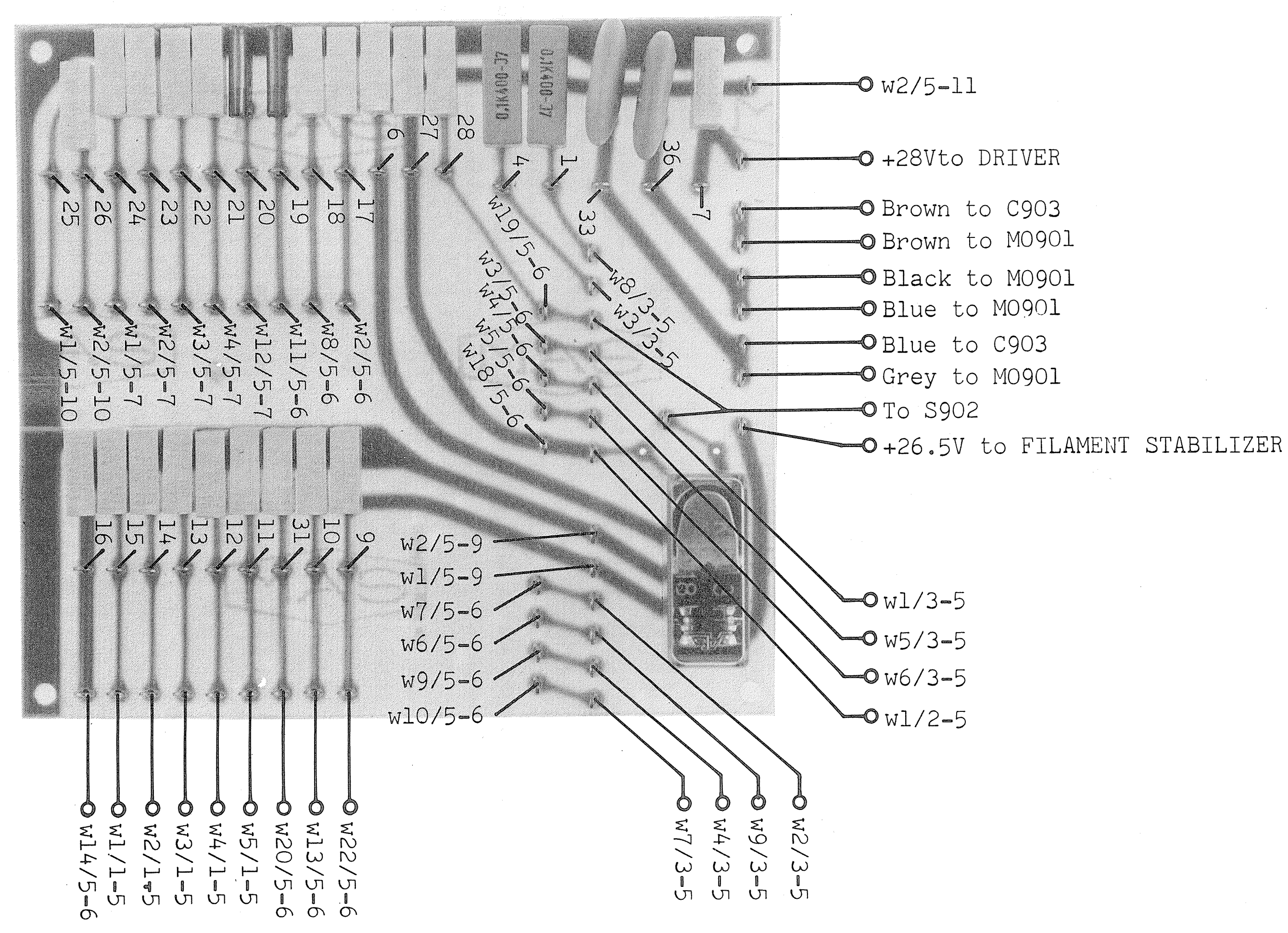
CIRCUIT DESCRIPTION THERMAL PROTECTION CIRCUIT ONLY T1127L

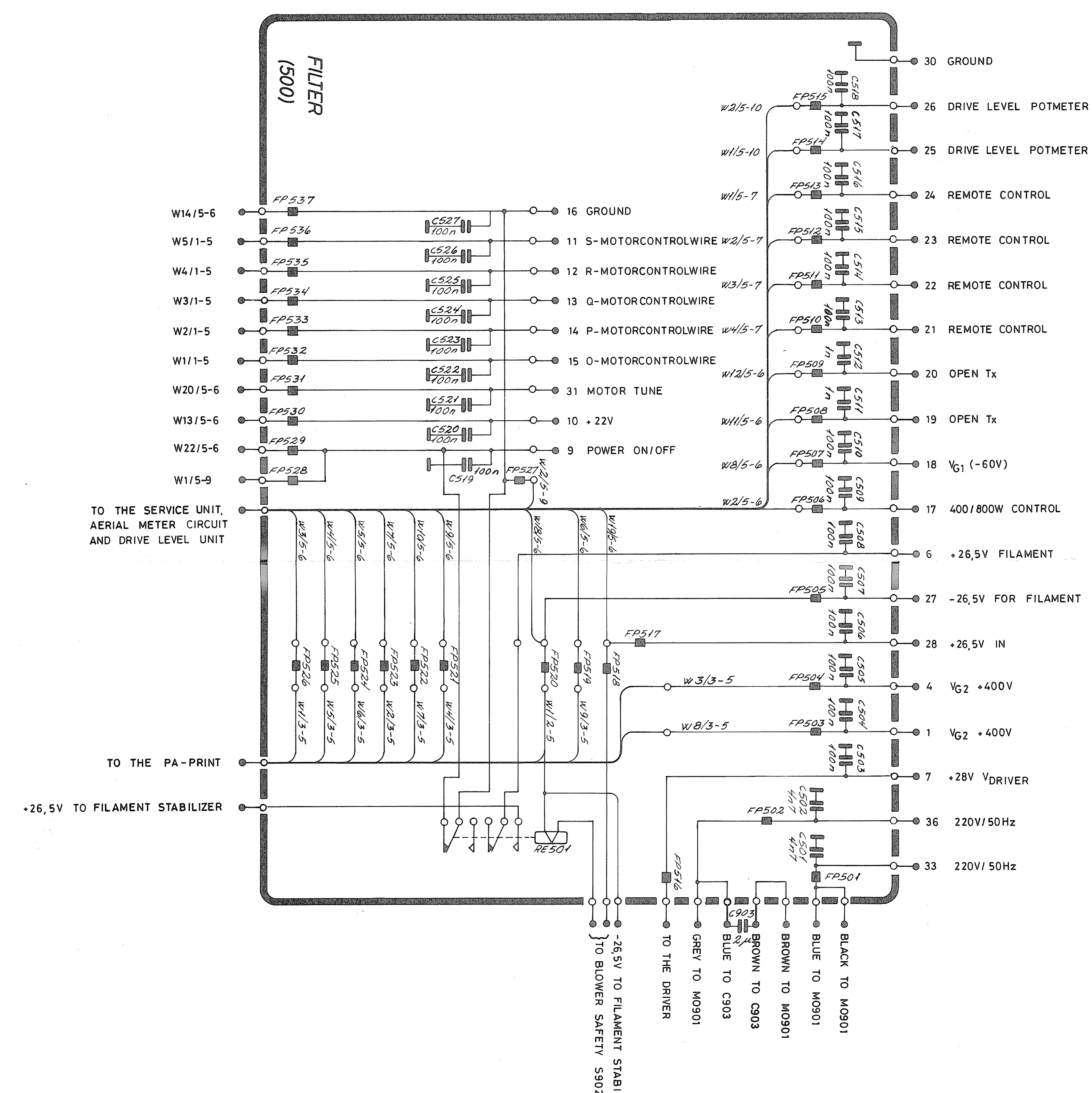
THERMAL PROTECTION CIRCUIT

The circuit protects the PA-tubes against excessive temperatures. When the plate temperature is above 250°C the value of the PTC-resistor R902 will be so high that the relay RE502 will release and R501 will be connected in series with the drive level potentiometer to reduce the drive level approx. 6 dB.
When the temperature is below approx. 200°C again the value of the PTC-resistor R902 will be so small that the relay RE502 will be activated and R501 will be short-circuited and drive level will be on normal.



T1127 L


w2/5-11
+28Vto DRIVER
Brown to C903
Brown to M0901
Black to M0901
Blue to M0901
Blue to C903
Grey to M0901
To S902
+26.5V to FILAMENT STABILIZER
w1/3-5
w5/3-5
w6/3-5
w1/2-5
w2/3-5
w9/3-5
w4/3-5
w7/3-5
w22/5-6
w13/5-6
w20/5-6
w5/1-5
w4/1-5
w3/1-5
w2/1-5
w1/1-5
w14/5-6
w2/5-6
w8/5-6
w11/5-6
w12/5-7
w4/5-7
w3/5-7
w2/5-7
w1/5-7
w2/5-10
w1/5-10
w2/5-9
w1/5-9
w7/5-6
w6/5-6
w9/5-6
w10/5-6
w19/5-6
w3/5-6
w4/5-6
w5/5-6
w18/5-6
w8/3-5
w3/3-5


FILTER
(500)
30 GROUND
26 DRIVE LEVEL POTMETER
25 DRIVE LEVEL POTMETER
24 REMOTE CONTROL
23 REMOTE CONTROL
22 REMOTE CONTROL
21 REMOTE CONTROL
20 OPEN Tx
19 OPEN Tx
18 VG1 (-60V)
17 400/800W CONTROL
6 +26,5V FILAMENT
27 -26,5V FOR FILAMENT
28 +26,5V IN
4 VG2 +400V
1 VG2 +400V
7 +28V VDRIVER
36 220V/50Hz
33 220V/50Hz
16 GROUND
11 S-MOTORCONTROLWIRE
12 R-MOTORCONTROLWIRE
13 Q-MOTORCONTROLWIRE
14 P-MOTORCONTROLWIRE
15 O-MOTORCONTROLWIRE
31 MOTOR TUNE
10 +22V
9 POWER ON/OFF
W14/5-6
W5/1-5
W4/1-5
W3/1-5
W2/1-5
W1/1-5
W20/5-6
W13/5-6
W22/5-6
W1/5-9
TO THE SERVICE UNIT, AERIAL METER CIRCUIT AND DRIVE LEVEL UNIT
TO THE PA-PRINT
+26,5V TO FILAMENT STABILIZER
BLACK TO M0901
BLUE TO M0901
BROWN TO M0901
BROWN TO C903
BLUE TO C903
GREY TO M0901
TO THE DRIVER
-26,5V TO FILAMENT STABILIZER
TO BLOWER SAFETY S902

CIRCUIT DESCRIPTION SERVICE UNIT T1127

SERVICE UNIT

The service unit consists of a test meter, which is located behind the right front panel cover and a printed circuit board located behind the left front panel cover.

On the printed circuit board following controls are placed:

TEST SWITCH (S601) with following functions:

Ik1: The cathode current in tube V201 is measured.

Ik2: The cathode current in tube V202 is measured.

The voltage drop across the cathode resistor is used to give an information of the cathode current. R307 or R310 is in serial with the test meter to give full scale deflection of 300 mA cathode current.

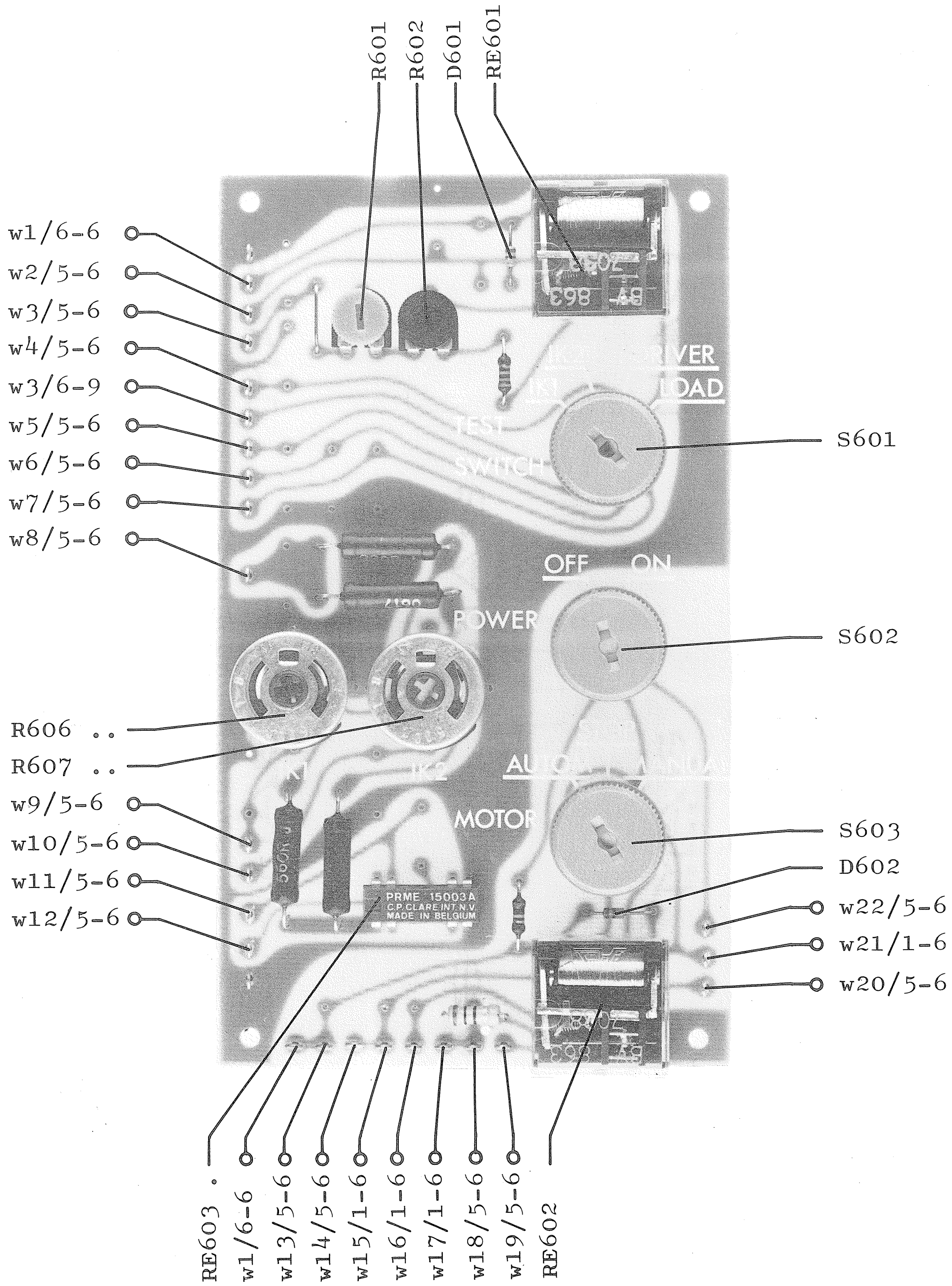
DRIVE: The positive peak of the RF signal on the grids is measured (the detector is located on the PA-print and consists of D303 and C309) and compared to the neg. bias in such a way that when the pointer of the test meter shows 3 div. the drive level is correct.

LOAD: The positive peak of the RF signal on the grids is measured (same detector as in drive) and compared with the peak to peak voltage swing on the anodes (peak to peak detector is located on the PA-print and consists of D301, D302 and C303) in such a way that when the pointer of the test meter is at zero, the tubes are properly loaded. When changing from C.T. bands to HF bands the anode impedance changes, and the sensitivity of the load meter is changed. This is done by means of RE601, R602 and R603.

POWER switch (S602): When it is in position ON the transmitter is controlled with the handset, in position OFF the anode and screen grid supply is switched off.

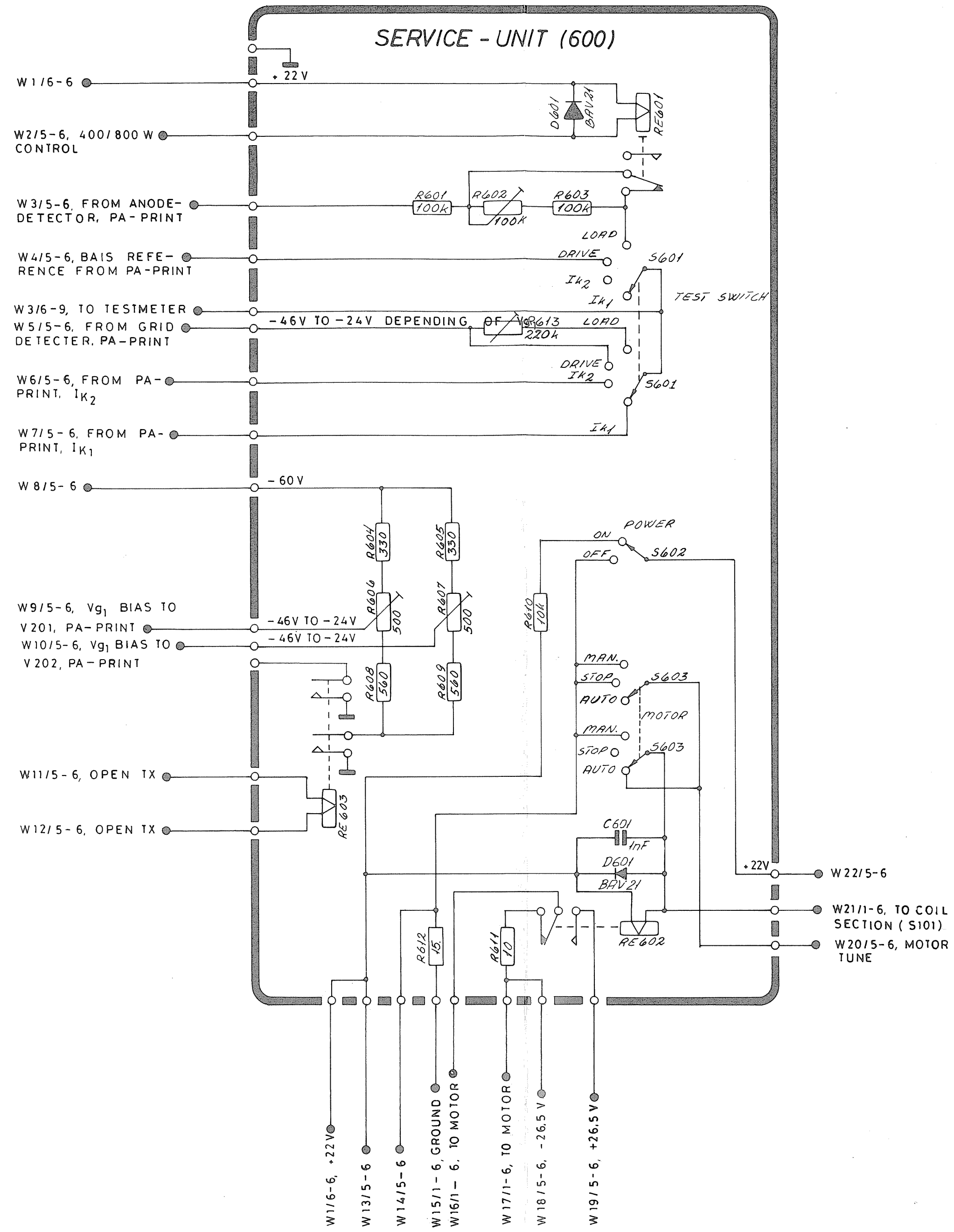
MOTOR switch (S603): When MOTOR switch is in position AUTOM, the motor (MO101) is controlled from the exciter. When pin 31 in P901 is grounded RE602 is activated and +26.5V is supplied to the motor and it will rotate. When the drum switch has reached the correct band, pin 31 is disconnected but the motor rotates until S101 is released.Then RE602 disconnects +26.5V to the motor and short-circuits the motor through R611 in order to stop the motor quickly. S101 is released when the drum switch is locked in the correct position. When MOTOR switch is in position MAN., the motor will rotate until the switch is switched back into position STOP.

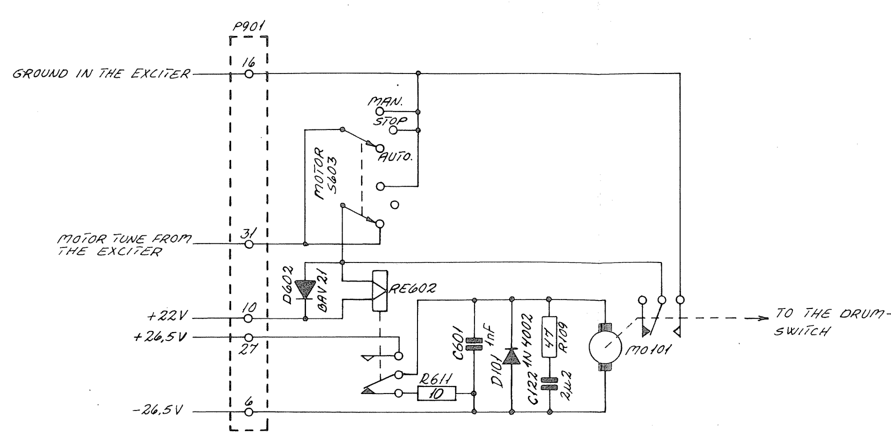
The zero signal currents in the PA tubes are adjusted by means of R606 and R607. The relay RE603 is opened when the transmitter is not keyed and the negative grid bias is then -60V to ensure that the tubes are cut off.



TEST CONDITIONS

Transmitter keyed.

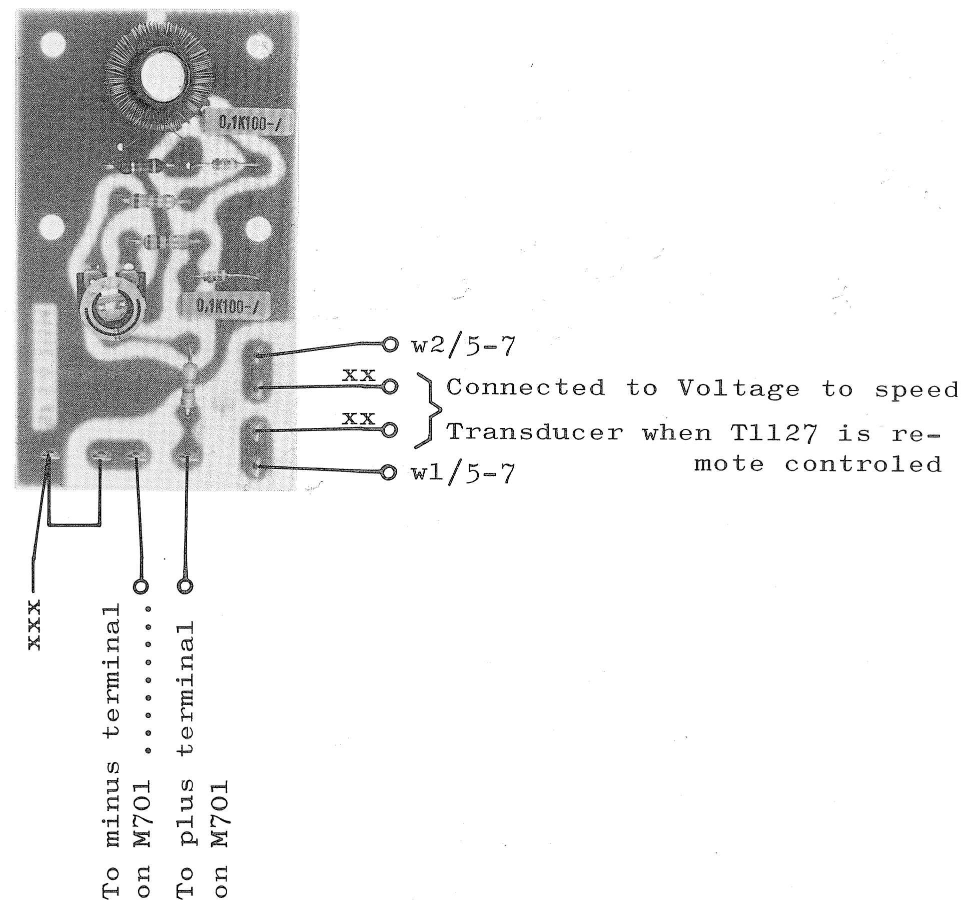


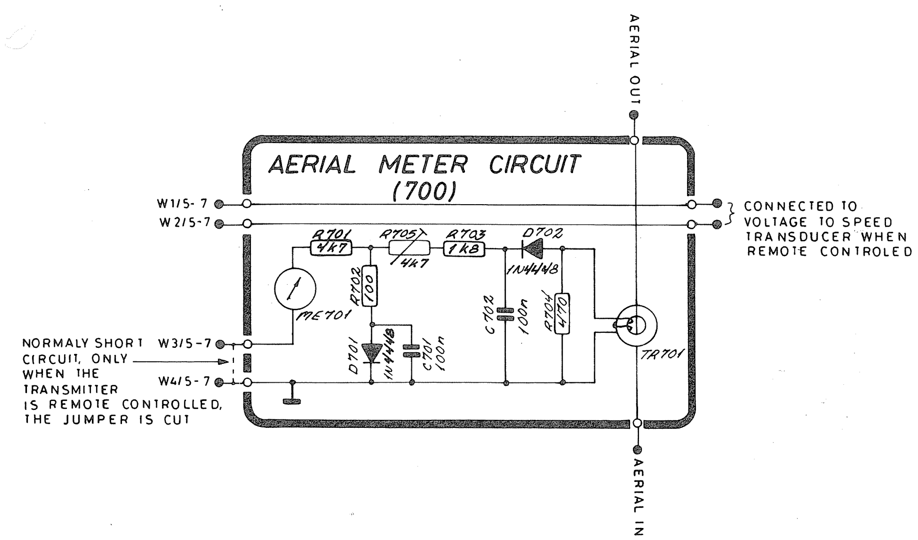


CIRCUIT DESCRIPTION AERIAL METER CIRCUIT T1127

AERIAL METER CIRCUIT

The voltage from the current transformer TR701 is rectified in a peak rectifier (D702 and C702) and fed into a voltage divider. When the aerial current is below 1 Amp., the meter sensitivity is determined by R701, R703, and R705. If the aerial current is above 1 Amp., D701 is on and the meter sensitivity is reduced because R702 is connected in parallel to the meter.

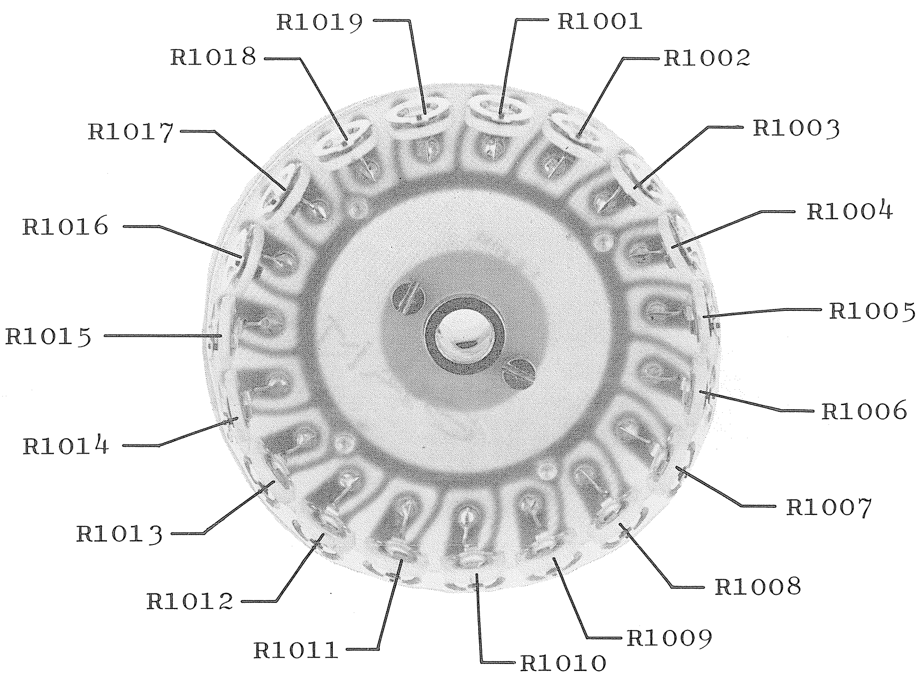


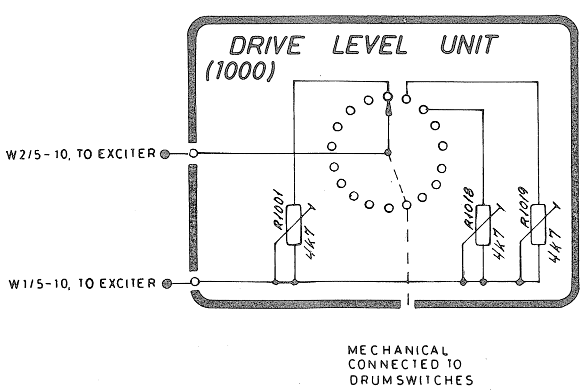


CIRCUIT DESCRIPTION DRIVE LEVEL UNIT T1127

DRIVE LEVEL UNIT

The potentiometers R1001 to R1019 give a DC voltage feed-back to a voltage dependent attenuator in the exciter.

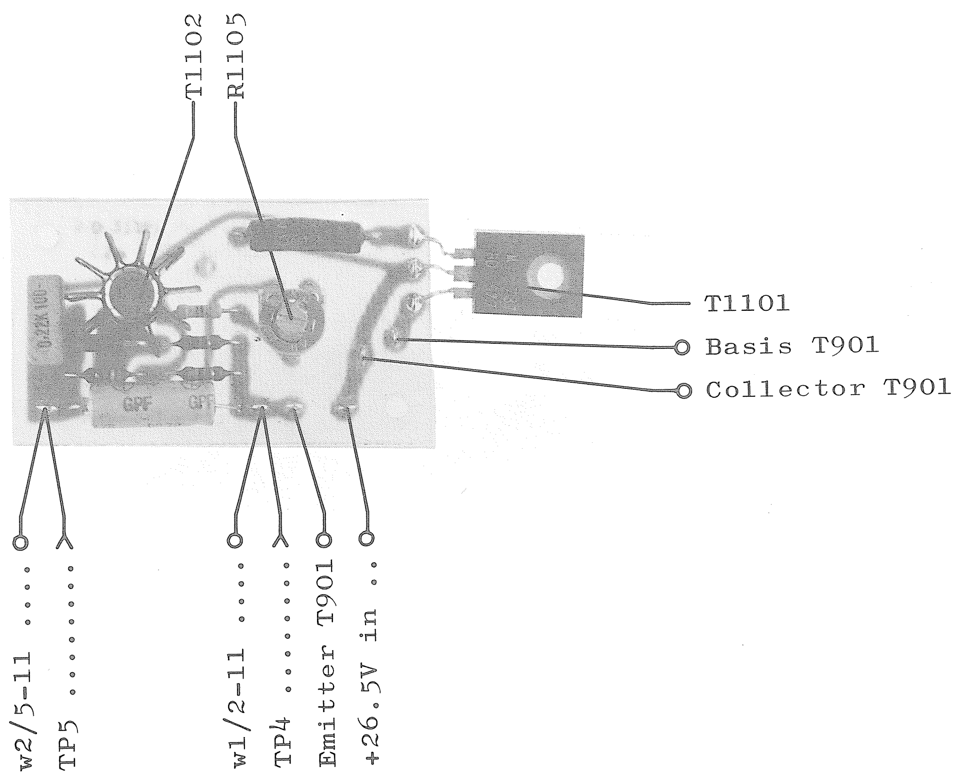


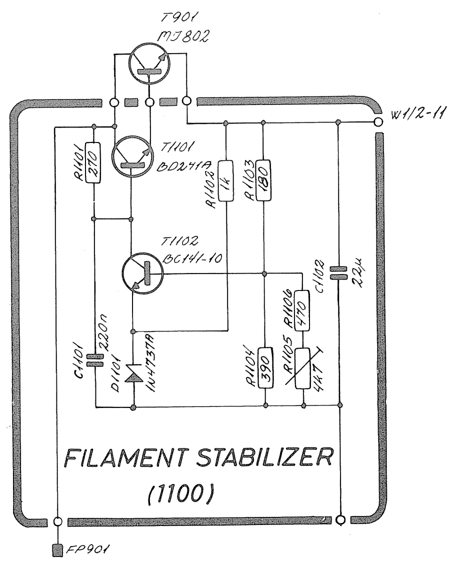


CIRCUIT DESCRIPTION FILAMENT STABILIZER T1127

FILAMENT STABILIZER

The stabilizer is supplied with 26.5V DC either direct from ship mains when N1400 is used, or via a rectifier when N1401 is used. The stabilizer is a serial regulator. It is mounted on the side of the filter box. T901 is mounted on the side of the driver unit.





CIRCUIT DESCRIPTION QUICK HEATING UNIT ONLY T1127LE

QUICK HEATING UNIT

This unit controls the filament supply in the following way.

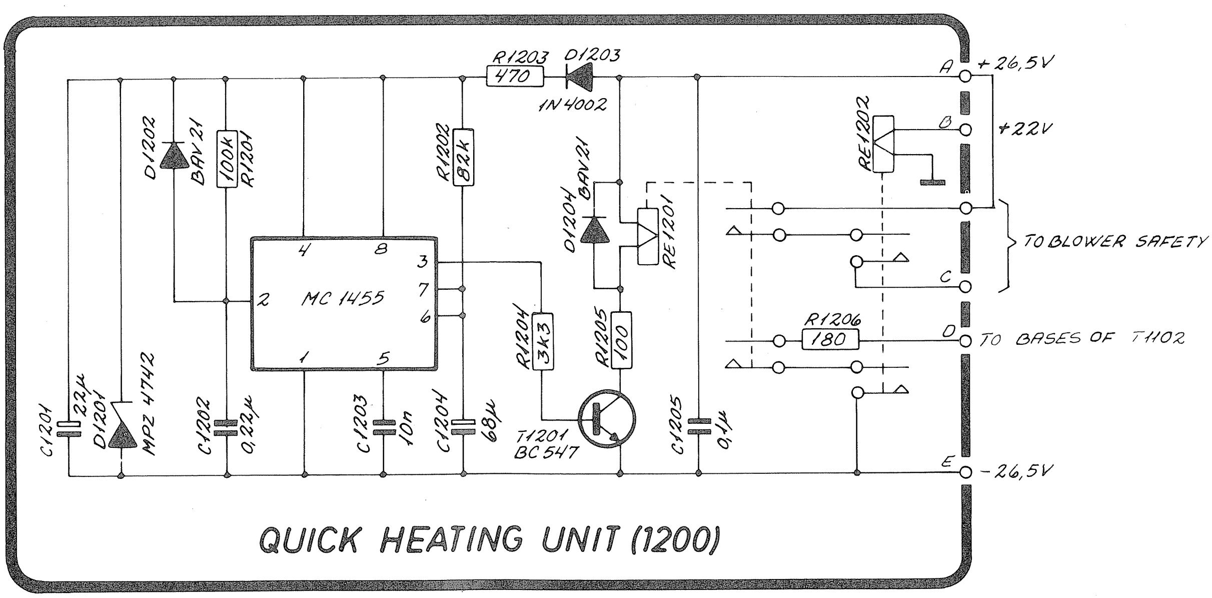
1. If the MAIN SWITCH is switched directly to ON the filament supply will be raised to 22V for a period controlled by the timer MC1455.

2. If the MAIN SWITCH is switched to STAND BY and left there until the delay time of the timer MC1455 has passed the filament supply will be 13.5V ±10%.

When the power supply is switched in position STAND BY (MAIN SWITCH) the +26.5V is switched on and the timer MC1455 starts. This means that pin 3 goes high and brings T1201 in saturation and activates the relay RE1201. When the MAIN SWITCH is in position STAND BY the +22V is not present and RE1202 will be open. First when the MAIN SWITCH is switched to position ON the +22V is switched on and RE1202 will be on. This means that the blower safety is over-rided and the base of T1102 is connected to ground through R1206, and it will stay so until the delay time of the timer is finished. Now pin 3 on MC1455 will go low and T1201 will be off and RE1201 will open.

When the base of T1102 is connected to ground through R1206 the filament supply will raise to 22V.

T1127 LE



QUICK HEATING UNIT (1200)

CIRCUIT DESCRIPTION SAFETY CIRCUIT T1127

SAFETY CIRCUIT

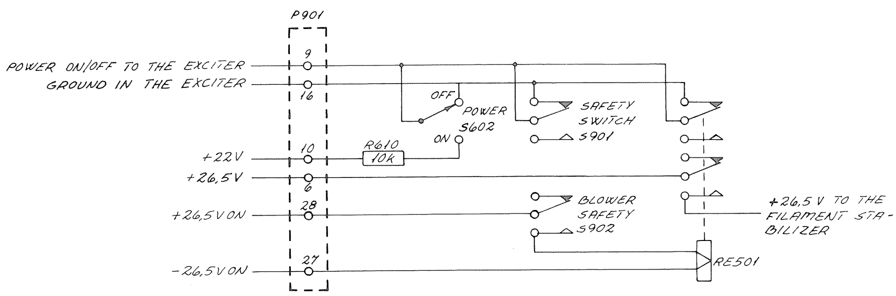
In the transmitter there is three safety switches.

1. Safety switch S901 is released when transmitter is drawn out of the rack.

2. Blower safety switch S902 is activated by the air pressure in such a way that when the blower stops S902 is released.

3. When the drum switch is rotating the power supply is blocked from the exciter.

When pin 9 in P901 is grounded the power supply is blocked from the exciter and the transmitter can not be keyed (anode- and screen grid supply is switched off). When S902 is open RE501 connects pin 9 in P901 to ground and the power supply is blocked. RE501 also disconnects the supply to the filaments.



Positions of factory programmed studs (round studs).

Upper drum

Pos.	Range			Motor pos.						Load												Aerial coil 2182	
	30	31	32	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	53	54
A				X					X		X												
B				X	X		X				X												
C	X	X	X	X		X			X												X		
D				X	X			X	X		X												
E	X	X	X	X		X															X		
F				X	X	X	X	X	X		X												
G	X	X	X	X			X	X	X												X		
H				X	X	X	X	X			X												
I	X	X	X	X			X	X													X		
K				X	X	X	X		X		X												
L	X	X	X	X			X		X												X		
M				X	X	X	X				X												
N	X	X	X	X			X														X		
O				X		X	X		X		X												
P	X	X	X	X				X	X												X		
Q				X		X	X				X												
R				X		X		X	X		X												
S				X		X		X			X												
T				X							X												

C 1/2

Lower drum

Pos.	Range										Aerial coil MF			Aerial coil HF													C_A		
	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
A	X	X		X			X				X	X	X																
B	X	X		X			X					X																	
C	X	X					X					X														X			
D	X	X		X			X					X																	
E	X	X			X		X					X	X												X	X			
F	X	X		X			X					X																	
G	X	X			X		X		X			X	X									X		X		X			
H	X	X		X			X					X																	
I	X	X			X		X	X	X		X	X	X								X	X		X		X			
K	X	X		X			X					X																	
L	X	X			X	X	X	X	X		X	X	X							X		X		X		X			
M	X	X		X			X					X																	
N			X		X	X		X	X		X	X	X						X	X		X		X		X			
O	X	X		X			X					X																	
P			X		X	X		X	X		X	X	X					X		X		X		X		X			
Q	X	X		X			X					X																	
R	X	X		X			X					X																	
S	X	X		X			X					X																	
T	X	X		X			X				X	X	X																

LOCATIONS OF PRE-PROGRAMMED STUDS T1127

Positions of factory programmed studs (round studs).

NOTE: ONLY VALID FOR SERIAL NO. ABOVE 201206

Upper drum

Pos.	Range			Motor pos.								Load											
	30	31	32	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	53	54
A				X					X													X	
B				X	X		X															X	
C	X	X	X	X		X			X												X		
D				X	X			X	X													X	
E	X	X	X	X		X															X		
F				X	X	X	X	X	X													X	
G	X	X	X	X			X	X	X												X		
H				X	X	X	X	X														X	X
I	X	X	X	X			X	X													X		
K				X	X	X	X		X													X	X
L	X	X	X	X			X		X												X		
M				X	X	X	X															X	X
N	X	X	X	X			X														X		
O				X		X	X		X													X	X
P	X	X	X	X				X	X												X		
Q				X		X	X															X	X
R				X		X		X	X													X	X
S				X		X		X														X	X
T				X				X														X	X

Lower drum

Pos.	Range										Aerial coil MF			Aerial coil HF													C_A		
	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
A	X	X		X			X					X	X																
B	X	X		X			X					X																	
C	X	X					X				X	X	X													X			
D	X	X		X			X					X																	
E	X	X			X		X				X	X	X												X	X			
F	X	X		X			X					X																	
G	X	X			X		X		X		X	X	X									X		X		X			
H	X	X		X			X					X																	
I	X	X			X		X	X	X		X	X	X								X	X		X		X			
K	X	X		X			X					X																	
L	X	X			X	X	X	X	X		X	X	X							X		X		X		X			
M	X	X		X			X					X																	
N			X		X	X		X	X		X	X	X						X	X		X		X		X			
O	X	X		X			X					X																	
P			X		X	X		X	X		X	X	X					X		X		X		X		X			
Q	X	X		X			X					X																	
R	X	X		X			X					X																	
S	X	X		X			X					X																	
T	X	X		X			X				X	X	X																

LOCATIONS OF PRE-PROGRAMMED STUDS T1127/T1127L

b Coil section T1127

Symbol	Description			Manufact.	
R101	Resistor	150 Kohm	1W	Vitrohm	BT 107-0
R102	Resistor	150 Kohm	1W	Vitrohm	BT 107-0
R103	Resistor	150 Kohm	1W	Vitrohm	BT 107-0
R104	Resistor	5 Mohm 2W 20%	8KV	Rosenthal	LHK 2
R105-					
R108	Resistor	240 ohm 12W 5%		Danoterm	GAN 12
R109	Resistor	47 ohm 0,5W 10%		Philips	2322 212 13479
C101	Capacitor ceramic	40pF±20%	3KV	R.C.L.	060239 RC 16x40L R7
C102	Capacitor ceramic	40pF±20%	3KV	R.C.L.	060239 RC 16x40L R7
C103-					
C111	Capacitor stack	T1127		S.P.	
C112	Capacitor	T1127	14nF	S.P.	83720/123
C113	Not used				
C114	Capacitor variable	T1127		S.P.	
C115	Capacitor ceramic	50pF±20%	5KV	U.T.C.	441/1/84250/013
C116	Capacitor ceramic	300pF±20%	3KV	R.C.L.	060237 RA 16x40L R42
C117	Capacitor ceramic	300pF±20%	3KV	R.C.L.	060237 RA 16x40L R42
C118	Capacitor ceramic	220pF±20%	5KV	U.T.C.	441/1/83822/113
C119	Capacitor ceramic	100pF±20%	5KV	U.T.C.	441/1/84310/113
C120	Capacitor ceramic	50pF±20%	5KV	U.T.C.	441/1/84250/013
C121	Capacitor	T1127	14nF	S.P.	
C122	Capacitor polycarbonate	2,2uF±10%	100V	ERO	MKC 1860-522/0
C123	Capacitor ceramic	300pF ± 20%	3KV	R.C.L.	060237 RA 16x40L R42
D101	Diode			Motorola	1N4002
L101	Coil	22MHz/25MHz		S.P.	
L102	Coil	16MHz		S.P.	
L103	Coil	12MHz		S.P.	
L104	Coil	8MHz		S.P.	
L105	Coil	6MHz		S.P.	
L106	Coil	4MHz		S.P.	
L107	MF Choke			S.P.	TL 071
L108	RF Choke			S.P.	TL 275
L109	Variometer 2182			S.P.	
L110	Variometer MF			S.P.	
L111	Variometer MF			S.P.	
L112	Coil Aerial			S.P.	
L113	MF Choke			S.P.	TL 071
S101	Microswitch			Cherry	E62 - 10H
S102	Switch	22MHz/25MHz		S.P.	
MO101	Step motor			S.P.	

b PA-unit T1127

Symbol	Description					Manufact.	
R201- R206	Resistor	18 ohm	5% MF		2W	Electrosil	N8
R207	Resistor	330 ohm	2%		1W	Vitrohm	253-0
R208	Resistor	4,75Kohm	1%		½W	Philips	2322 152 54752
R209- R216	Resistor	680 ohm			1W	Vitrohm	BT107-0
R217	Resistor	4,75Kohm	1%		½W	Philips	2322 152 54752
R218	Resistor	330 ohm	2%		1W	Vitrohm	253-0
R219- R224	Resistor	18 ohm	5% MF		2W	Electrosil	N8
C201	Capacitor					S.P.	
C202	Capacitor ceramic	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
C203	Capacitor ceramic	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
C204	Capacitor ceramic	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
C205	Capacitor ceramic	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
C206	Capacitor ceramic	1nF	-20/+80%		5KV	Ferroperm	9/0138,9 isol.
C207	Capacitor ceramic	1nF	-20/+80%		5KV	Ferroperm	9/0138,9 isol.
C208	Capacitor ceramic	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
C209	Capacitor ceramic	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
C210	Capacitor ceramic	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
C211	Capacitor ceramis	4,7nF	-20/+80%		400V	Ferroperm	9/0138,9
L202	Parasit coil					S.P.	TL259
L203	Parasit coil					S.P.	TL259
V201	PA tube					RCA	8122
V202	PA tube					RCA	8122
FP201- FP208	Ferroxcube beads					Philips	4322 020 34420

PA-print T1127

Symbol	Description				Manufact.	
R301	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R302	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R303	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R304	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R305	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R306	Resistor	68 Kohm		0,33W	Philips	2322 211 13683
R307	Resistor	8,45 Kohm	1% MF	0,4 W	Philips	2322 151 58452
R308	Resistor	100 Kohm		0,33W	Philips	2322 211 13104
R309	Resistor	100 Kohm		0,33W	Philips	2322 211 13104
R310	Resistor	8,45 Kohm	1% MF	0,4 W	Philips	2322 151 58452
R311	Resistor	22 Kohm		0,33W	Philips	2322 211 13223
R312	Resistor	22 Kohm		0,33W	Philips	2322 211 13223
R313	Resistor	22 ohm		0,33W	Philips	2322 211 13229
R314	Resistor	270 Kohm		0, 5W	Philips	2322 212 13274
C301	Capacitor ceramic	39pF	±5%	400V	Ferroperm	9/0112.9
C302	Capacitor polyester	270pF		500V	Philips	2222 427 42701
C303	Capacitor polyester	0,22uF		100V	ERO	MKT 1822 422/0
C304	Capacitor ceramic	4,7nF	-20/+80%	400V	Ferroperm	9/0138.9
C305	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C306	Capacitor polyester	0,1uF		400V	ERO	MKT 1822 410/4
C307	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C308	Capacitor ceramic	4,7nF	-20/+80%	400V	Ferroperm	9/0138.9
C309	Capacitor polyester	0,22uF		100V	ERO	MKT 1822 422/0
C310	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C311	Capacitor polyester	0,1uF		400V	ERO	MKT 1822 410/4
C312	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C313	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
D301	Diode				Texas	1S961
D302	Diode				Texas	1S961
D303	Diode				Texas	1S961
D304	Diode				Motorola	1N4002
D305	Zener diode				Motorola	1N4757
L301	Coil				S.P.	TL221
L302	Coil				S.P.	TL221

b	Driver unit T1127				
Symbol	*Description*			*Manufact.*	
R401	Resistor	82 ohm	0,5W	Philips	2322 212 13829
R402	See chapter for driver				
R403	See chapter for driver				
R404	Resistor	18 ohm	0,33W	Philips	2322 211 13189
R405	Resistor	120 ohm	0,5W	Philips	2322 212 13121
R406	Resistor	560 ohm	1,15W	Philips	2322 214 13561
R407	Not used				
R408	Resistor	5,1 ohm	0,33W	Philips	2322 211 13518
R409	Resistor	33 ohm 2%	1W	Vitrohm	253-0
R410	Resistor	6,8 ohm 2%	1W	Vitrohm	253-0
R411	Resistor,potentiometer 10ohm 10%			AB Metal	Typ. 115 Q7
R412	Resistor	18 ohm	0,5W	Philips	2322 212 13189
R413	Resistor	18 ohm	0,5W	Philips	2322 212 13189
R414	Resistor	18 ohm	0,5W	Philips	2322 212 13189
R415-					
R422	Resistor	1Kohm	0,67W	Philips	2322 213 13102
R423	Resistor	33 ohm	0,5W	Philips	2322 212 13339
R424	Resistor	33 ohm	0,5W	Philips	2322 212 13339
R425-					
R428	Resistor	3,3 ohm	1,15W	Philips	2322 214 13338
R429	Resistor	12 ohm	0,5W	Philips	2322 212 13129
C401	Capacitor,polyester	1uF	100V	ERO	MKT 1822-510/0
C402-					
C404	Capacitor,polyester	0,1uF	100V	ERO	MKT 1822-410/0
C405	See chapter for driver				
C406	Capacitor,polyester	0,22uF	100V	ERO	MKT 1822-422/0
C407	Capacitor,ceramic	27pF 5%	400V	Ferroperm	9/0112,9
C408-					
C410	Capacitor,polyester	0,1uF	100V	ERO	MKT 1822-410/0
C411	Capacitor,polyester	0,22uF	100V	ERO	MKT 1822-410/0
C412	Capacitor,ceramic	5nF	500V	CRL	DGDS/4x16
C413	Capacitor,ceramic	5nF	500V	CRL	DGDS/4x16

Driver unit T1127

Symbol	Description	Manufact.	
C414	Capacitor, ceramic 10pF 5% 400V	Ferroperm	9/0112,9
C415	Capacitor, ceramic 27pF 5% 400V	Ferroperm	9/0112,9
C416	Capacitor, ceramic 27pF 5% 400V	Ferroperm	9/0112,9
C417	Capacitor, ceramic 39pF 5% 400V	Ferroperm	9/0112,9
C418	Not used		
C419-			
C420	Capacitor, polyester 0,1uF 100V	ERO	MKT 1822-410/0
T401	Transistor	Motorola	ZRF 0132
T402	Transistor	Motorola	MRF 401MP
T403	Transistor	Motorola	MRF 401MP
D401	Diode, zener		1N5338
L401	Coil	S.P.	TL 114
L402	Choke	S.P.	TL 067
L403	Choke	S.P.	TL 067
TR401	Transformer	S.P.	TL 228
TR402	Transformer, output	S.P.	TL 229
FP401	Ferroxcube beads	Philips	4322 020 34420

b Filter T1127

Symbol	Description				Manufact.	
C501	Capacitor ceramic	4n7	-20/+80 %	5KV	Ferroperm	9/138,9 isol.
C502	Capacitor ceramic	4n7	-20/+80%	5KV	Ferroperm	9/128,9 isol.
C503	Capacitor polyester	0,1uF	20%	100V	ERO	MKT 1822 410/0
C504	Capacitor polyester	0,1uF	20%	400V	ERO	MKT 1822 410/4
C505	Capacitor polyester	0,1uF	20%	400V	ERO	MKT 1822 410/4
C506-						
C510	Capacitor polyester	0,1uF	20%	100V	ERO	MKT 1822 410/0
C511	Capacitor polycarbonate	1nF	20%	630V	ERO	KC 1849/210/6
C512	Capacitor polycarbonate	1nF	20%	630V	ERO	KC 1849/210/6
C513-						
C527	Capacitor polyester	0,1uF	20%	100V	ERO	MKT 1822 410/0
RE501	Relay			24V	Pasi	KS 3
FP501-						
FP537	Ferroxcube beads				Kaschke	K3/1200/01 Hz 4/2/7A
	T1127L					
C528	Capacitor polyester	0,1uF	20%	100V	ERO	MKT 1822 410/0
RE502	Relay			12 V	Clare	PRME 15002
R501	Resistor	3.3Kohm		0.33W	Philips	2322 211 13332

b	Service unit T1127		
Symbol	*Description*	*Manufact.*	
R601	Resistor 100Kohm 5% 0,33W	Philips	2322 211 13104
R602	Resistor potentiometer 100Kohm 5% 0,33W	Philips	2322 410 43361
R603	Resistor 100Kohm 5% 0,33W	Philips	2322 211 13104
R604	Resistor 330 ohm 5% 4W	Philips	2322 330 22331
R605	Resistor 330 ohm 5% 4W	Philips	2322 330 22331
R606	Resistor potentiometer 500 ohm 10% 3W	A.B.Metal	115Q7
R607	Resistor potentiometer 500 ohm 10% 3W	A.B.Metal	115Q7
R608	Resistor 560 ohm 5% 4W	Philips	2322 330 22561
R609	Resistor 560 ohm 5% 4W	Philips	2322 330 22561
R610	Resistor 10Kohm 5% 0,33W	Philips	2322 211 13103
R611	Resistor 10 ohm 10% 0,5W	Philips	2322 211 13109
R612	Resistor 15 ohm 5% 0,33W	Philips	2322 211 13159
R613	Resistor potentiometer 220Kohm	Philips	2322 410 43362
RE601	Relay 22V-15% +10% - 10°C + 10°C	Pasi	MS/K BV863
RE602	Relay 22V-15% +10% - 10°C + 10°C	Pasi	MS/K BV863
RE603	Relay DLR	Siemens	V23100-V4324-B000
D601	Diode	Philips	BAV 21
D602	Diode	Philips	BAV 21
S601	Switch	Jeanrenaud	RBP12F 2x4 NCC
S602	Switch	Jeanrenaud	RBP12F 4x2 NCC
S603	Switch	Jeanrenaud	RBP12F 2x3 NCC

a Aerialmeter circuit T1127

Symbol	Description			Manufact.	
R701	Resistor	4,7 Kohm	0,33W	Philips	2322 211 13392
R702	Resistor	100 ohm	0,33W	Philips	2322 211 13152
R703	Resistor	1,8 Kohm	0,33W	Philips	2322 211 13333
R704	Resistor	470 ohm	0,33W	Philips	2322 211 13471
R705	Resistor potentiomete	4,7 Kohm		Philips	2322 410 43358
C701	Capacitor polyester	0,1uF	100V	ERO	MKT 1822 410/0
C702	Capacitor polyester	0,1uF	100V	ERO	MKT 1822 410/0
D701	Diode			Texas/ Philips	1N4448
D702	Diode			Texas/ Philips	1N4448
ME701	Meter nonometer			Elmatok	MG20
TR701	Toroide			S.P.	TL072

b

Chassis T1127

Symbol	Description				Manufact.	
R901	Resistor	47 ohm	5%	15W	Vitrohm	220-0
C903	Capacitor	2uF		400V	NETO	Type LC200
T901	Transistor				Motorola	MJ 802
S901	Microswitch				Cherry	E62-10H
ME901	Servicemeter	± 100uA DC			Shinohara	MR 45P
MO901	Blower	1x220V 50 Hz			EBM	Type RG E 120-2 220V 2100 omdr.
P901	Plug	1772			Molex	03-06-2364
J901	Coaxsocket				K.V.Hansen	SO239
FP901	Ferroxcube beads				Kaschke	K3/1200/01Hz 4/2/719
		T1127L				
R902	Resistor PTC	110°			Microtherm	PTC 110 KYC 511
R903	Resistor PTC	110°			Microtherm	PTC 110 KYC 511

Drive level unit T1127

Symbol	Description	Manufact.	
R1001	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1002	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1003	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1004	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1005	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1006	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1007	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1008	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1009	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1010	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1011	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1012	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1013	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1014	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1015	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1016	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1017	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1018	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472
R1019	Resistor potentiometer 4,7 Kohm $\frac{1}{2}$W	Philips	2322 482 30472

a Filament Stabilizer T1127

Symbol	Description			Manufact.	
R1101	Resistor	270 ohm	4,2W	Philips	2322 330 22271
R1102	Resistor	1Kohm	0,33W	Philips	2322 211 13102
R1103	Resistor	180 ohm	0,33W	Philips	2322 211 13181
R1104	Resistor	390 ohm	0,33W	Philips	2322 211 13391
R1105	Resistor potentiometer	4,7Kohm		A.B. Metal	Typ. HC10
R1106	Resistor	470Kohm	0,33W	Philips	2322 211 13471
C1101	Capacitor polyester	0,22uF	100V	Ero	MKT 1822-422/0
C1102	Capacitor electrolytic	22uF	40V	Siemens	B41283-B7226-T
D1101	Diode, zener		7,5V	Motorola	1N4737A
T1101	Transistor			Motorola	BD 241A
T1102	Transistor			Siemens	BC 141-10

FILTER UNIT H1204

Symbol	Description				Manufact.	
C1201	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1202	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1203	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1204	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1205	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1206	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1207	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1208	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1209	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1210	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1211	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1212	Capacitor polyester	0.1uF	20%	100V	Philips	2222 244 24104
C1213	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1214	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1215	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1216	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1217	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1218	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1219	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1220	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104

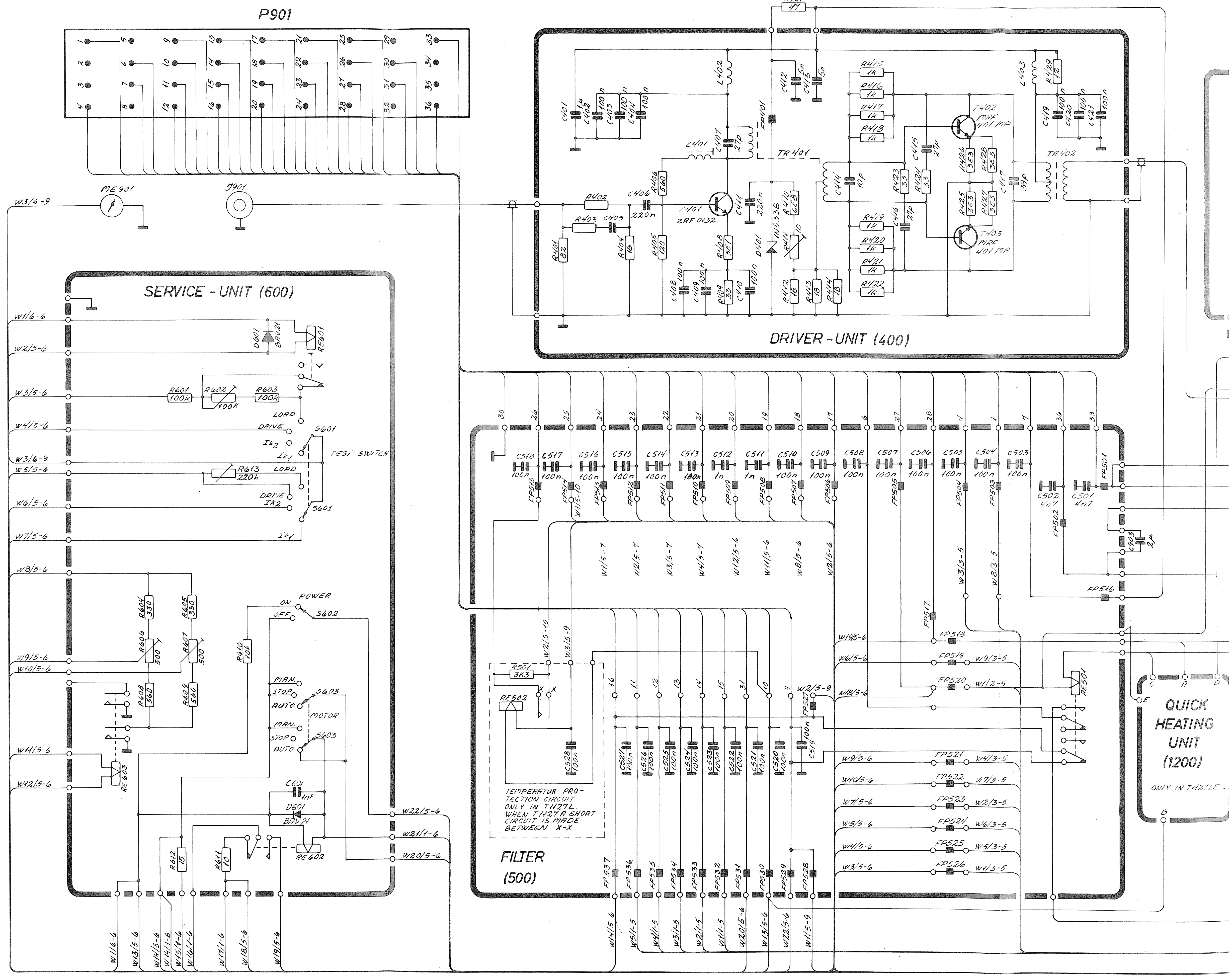
REAR CONTACT BOARD H1204 b

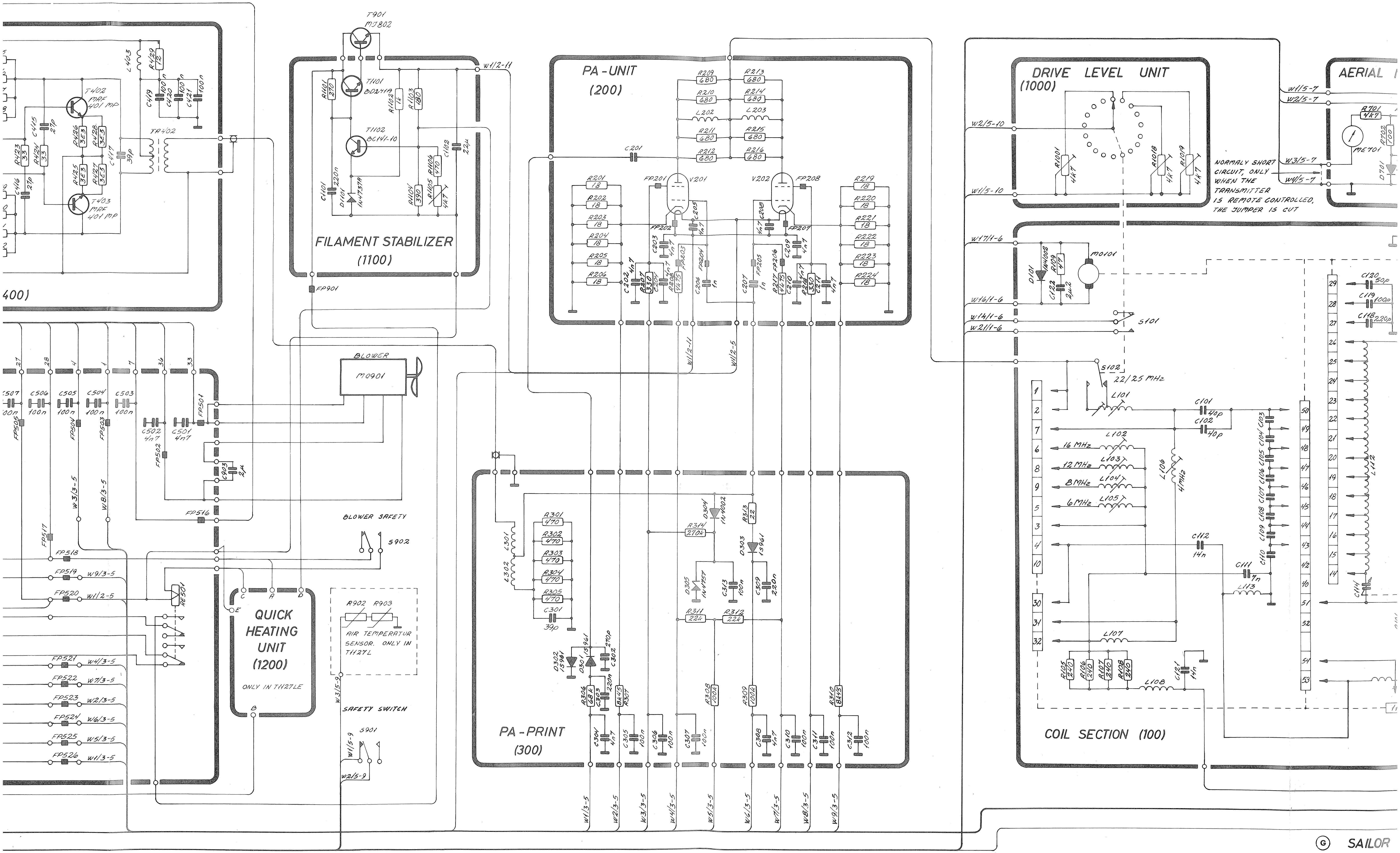
Symbol	Description		Manufact.	
D101	Diode, silicon		Philips	BAV 21
D102	Diode, zener 5,1V ±5%	5W	Motorola	1N5338
D103	Diode, silicon		Philips	BAV 21
R101	Resistor 47 ohm	0.33W	Philips	2322 211 13479
RE101	Relay		Pasi	MS/K BV863
RE102	Relay, reed	24V	Clare	Preme 15003A
RE103	Relay, reed	24V	Clare	Preme 15003A
RE104	Relay, reed	24V	Clare	Preme 15003A
FP101	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP102	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP103	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP104	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP105	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP106	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP107	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP108	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP109	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP110	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP111	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP112	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP113	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP114	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP115	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP116	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP117	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
FP118	Ferroxcube beads		Kaschke	K3/1200/0.1Hz 4/2/7A
F101	Fuse 315mA time-lag Ø5x20mm		Elu	

QUICK HEATING UNIT T1127LE

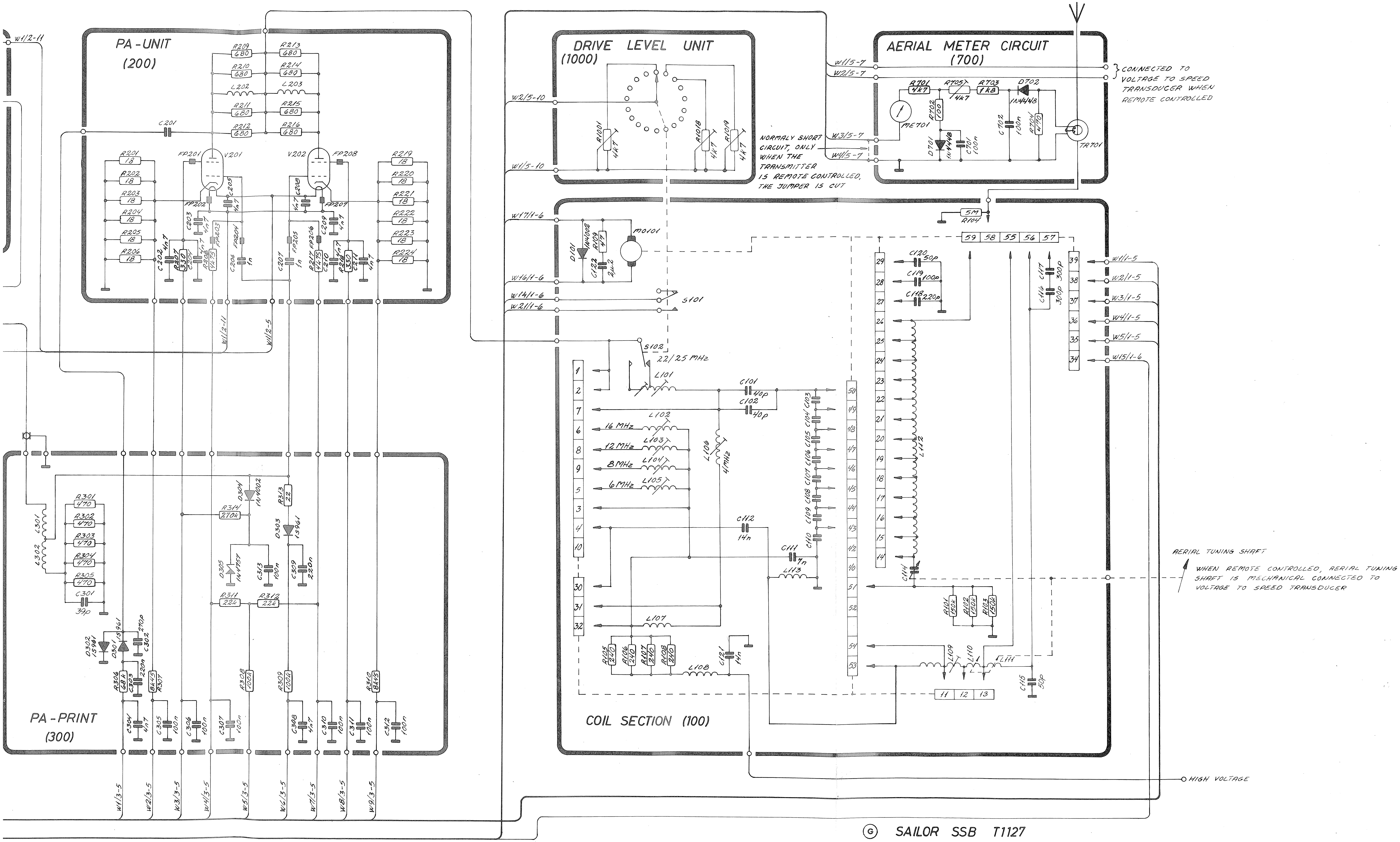
Symbol	Description				Manufact.	
R1201	Resistor		100Kohm	0.33W	Philips	2322 211 13104
R1202	Resistor		82Kohm	0.33W	Philips	2322 211 13823
R1203	Resistor		470 ohm	1.15W	Philips	2322 214 13471
R1204	Resistor		3.3Kohm	0.33W	Philips	2322 211 13332
R1205	Resistor		100 ohm	0.33W	Philips	2322 211 13101
R1206	Resistor		180 ohm	0.33W	Philips	2322 211 13181
C1201	Capacitor	tantalum	22uF	40V	Siemens	B41283-B7226-T
C1202	Capacitor	polyester	0.22uF	100V	ERO	MKT 1822-422/0
C1203	Capacitor	ceramic	10nF+80/-20%	50V	KCK	HE70SJYF103Z
C1204	Capacitor	tantalum	68uF±10%	16V	ERO	ETQ 68/16 10%
C1205	Capacitor	polyester	0.1uF	100V	ERO	MKT 1822-410/0
D1201	Diode, zener		12V 5%	1W	Motorola	MPZ 4742A
D1202	Diode				Philips	BAV21
D1203	Diode				Motorola	1N4002
D1204	Diode				Philips	BAV21
T1201	Transistor				Motorola	BC547A
IC1201	Integrated circuit				Motorola	MC1455PL
RE1201	Relay			24V	National	HB2-DC 24V
RE1202	Relay			24V	National	HB2-DC 24V

1	VG2 (+400V)
2	
3	
4	VG2 (+400V)
5	
6	+26,5V FILAMENT
7	+28V
8	
9	POWER ON/OFF
10	+22V
11	S-MOTORCONTROLWIRE
12	R-MOTORCONTROLWIRE
13	Q-MOTORCONTROLWIRE
14	P-MOTORCONTROLWIRE
15	O-MOTORCONTROLWIRE
16	GROUND
17	400/800W CONTROL
18	VG1 (-60V)
19	OPEN TX
20	OPEN TX
21	REMOTE CONTROL
22	REMOTE CONTROL
23	REMOTE CONTROL
24	REMOTE CONTROL
25	DRIVE LEVEL POTMETER
26	DRIVE LEVEL POTMETER
27	-26,5V FOR FILAMENT
28	+26,5V ON
29	
30	GROUND
31	MOTOR TUNE
32	
33	AC BLOWER (220V/50Hz)
34	
35	
36	AC BLOWER (220V/50Hz)

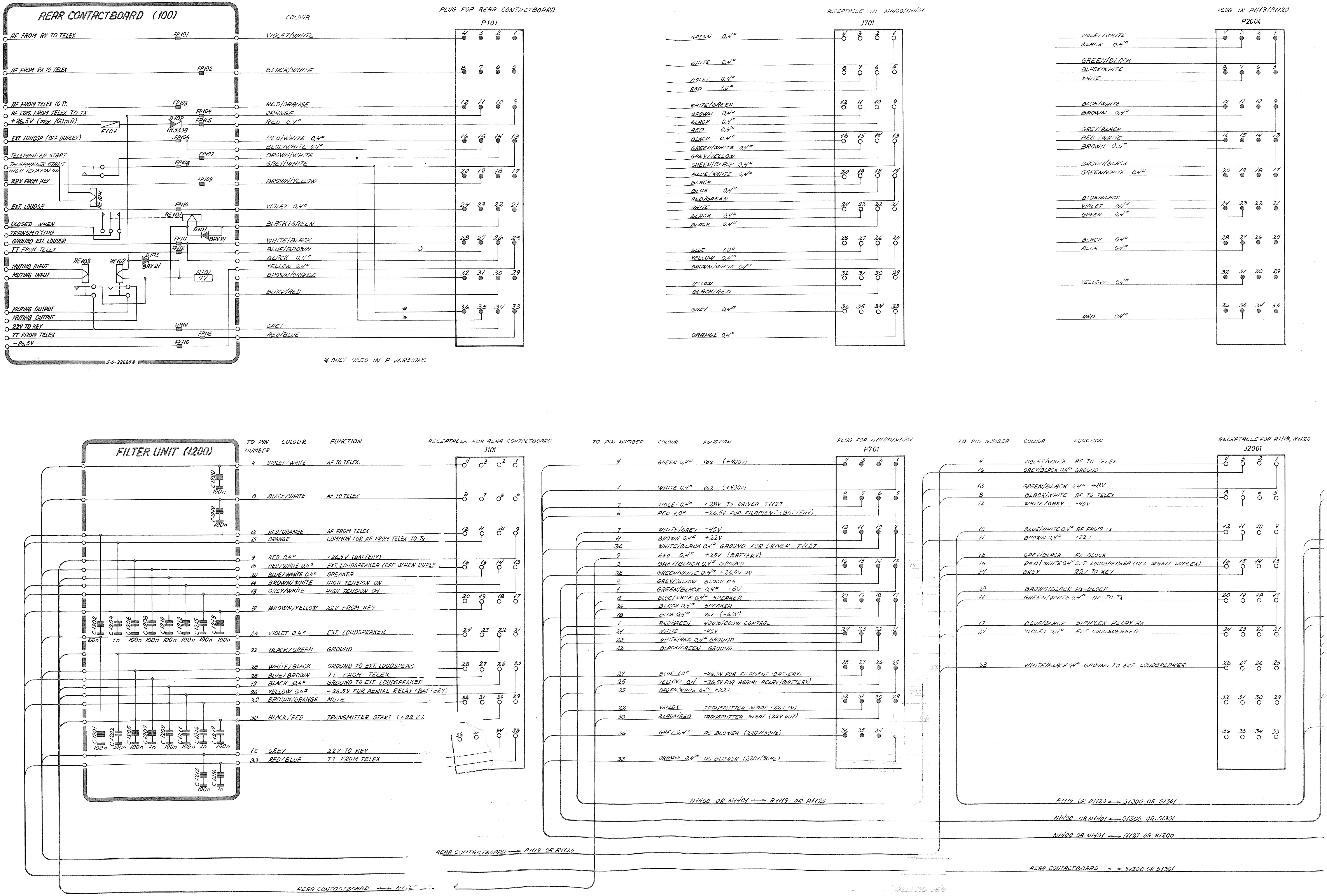


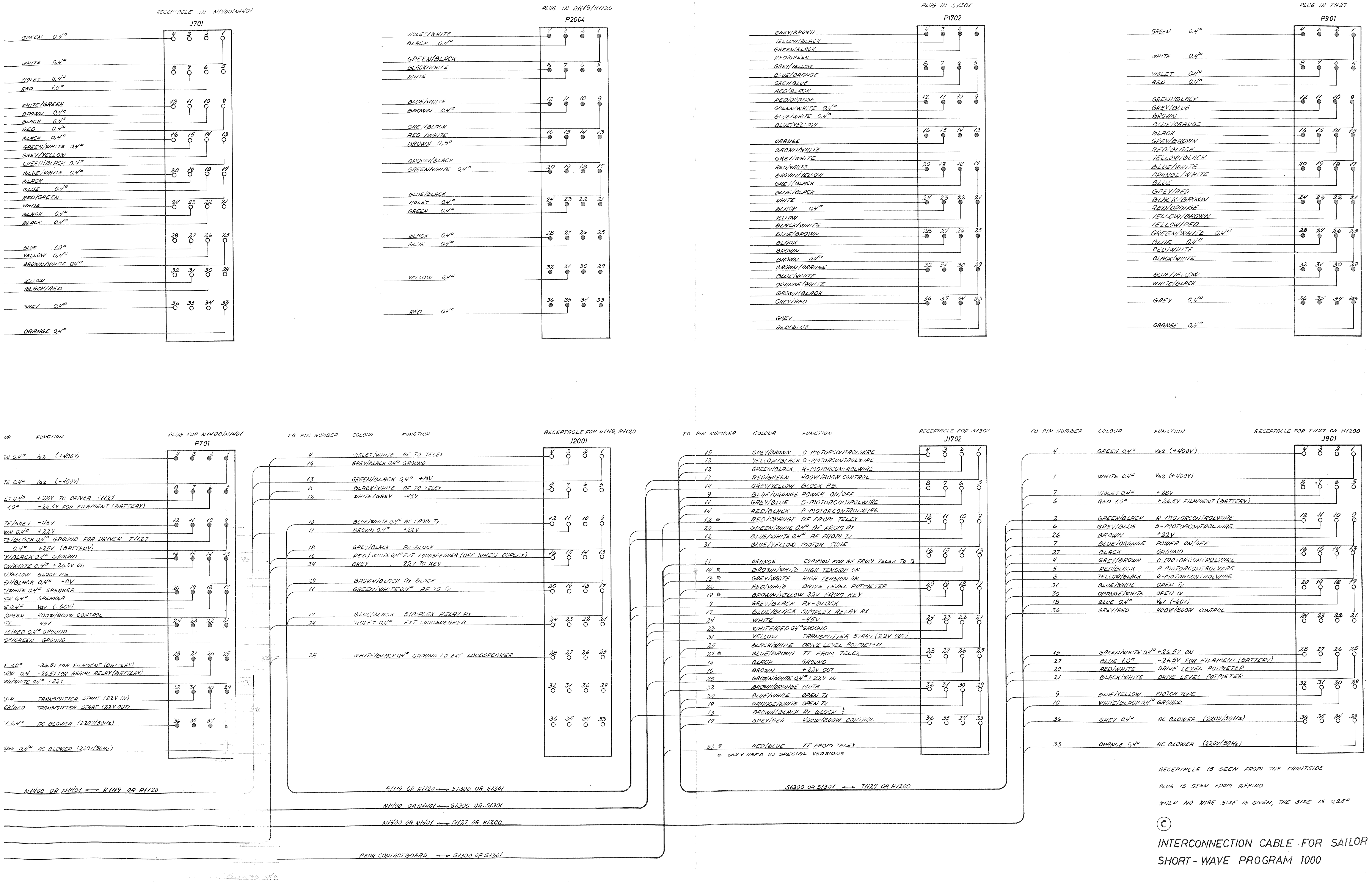

FILAMENT STABILIZER
(1100)
PA-UNIT
(200)
DRIVE LEVEL UNIT
(1000)
AERIAL
NORMALY SHORT CIRCUIT, ONLY WHEN THE TRANSMITTER IS REMOTE CONTROLLED, THE JUMPER IS CUT
BLOWER
M0901
BLOWER SAFETY
S902
QUICK HEATING UNIT
(1200)
ONLY IN TH27LE
AIR TEMPERATUR SENSOR. ONLY IN TH27L
SAFETY SWITCH
S901
PA-PRINT
(300)
COIL SECTION (100)
400)
T901
MJ802
T1101
BD241A
T1102
BC141-10
T402
MRF 401 MP
T403
MRF 401 MP
TR402
V201
V202
M0101
S101
S102
22/25 MHz
16 MHz
12 MHz
8 MHz
6 MHz
RE501
R902
R903

SAILOR



© SAILOR SSB T1127


REAR CONTACTBOARD (100)
COLOUR
PLUG FOR REAR CONTACTBOARD
P101
AF FROM RX TO TELEX
AF FROM RX TO TELEX
AF FROM TELEX TO TX
AF COM. FROM TELEX TO TX
+26,5V (max. 100mA)
EXT. LOUDSP. (OFF DUPLEX)
TELEPRINTER START
TELEPRINTER START
HIGH TENSION ON
22V FROM KEY
EXT. LOUDSP.
CLOSED WHEN
TRANSMITTING
GROUND EXT. LOUDSP.
TT FROM TELEX
MUTING INPUT
MUTING INPUT
MUTING OUTPUT
MUTING OUTPUT
22V TO KEY
TT FROM TELEX
-26,5V
5-0-22625R
VIOLET/WHITE
BLACK/WHITE
RED/ORANGE
ORANGE
RED 0,4□
RED/WHITE 0,4□
BLUE/WHITE 0,4□
BROWN/WHITE
GREY/WHITE
BROWN/YELLOW
VIOLET 0,4□
BLACK/GREEN
WHITE/BLACK
BLUE/BROWN
BLACK 0,4□
YELLOW 0,4□
BROWN/ORANGE
BLACK/RED
GREY
RED/BLUE
* ONLY USED IN P-VERSIONS
RECEPTACLE IN N1400/N1401
J701
PLUG IN R1119/R1120
P2004
FILTER UNIT (1200)
TO PIN NUMBER
COLOUR
FUNCTION
RECEPTACLE FOR REAR CONTACTBOARD
J101
AF TO TELEX
AF TO TELEX
AF FROM TELEX
COMMON FOR AF FROM TELEX TO Tx
+26,5V (BATTERY)
EXT. LOUDSPEAKER (OFF WHEN DUPLEX)
SPEAKER
HIGH TENSION ON
HIGH TENSION ON
22V FROM KEY
EXT. LOUDSPEAKER
GROUND
GROUND TO EXT. LOUDSPEAKER
TT FROM TELEX
GROUND TO EXT. LOUDSPEAKER
-26,5V FOR AERIAL RELAY (BATTERY)
MUTE
TRANSMITTER START (+22 V)
22V TO KEY
TT FROM TELEX
PLUG FOR N1400/N1401
P701
Vg2 (+400V)
Vg2 (+400V)
+28V TO DRIVER T1127
+26,5V FOR FILAMENT (BATTERY)
-45V
+22V
GROUND FOR DRIVER T1127
+25V (BATTERY)
GROUND
+26,5V ON
BLOCK P.S.
+8V
SPEAKER
SPEAKER
Vg1 (-60V)
400W/800W CONTROL
-45V
GROUND
GROUND
-26,5V FOR FILAMENT (BATTERY)
-26,5V FOR AERIAL RELAY (BATTERY)
+22V
TRANSMITTER START (22V IN)
TRANSMITTER START (22V OUT)
AC BLOWER (220V/50Hz)
AC BLOWER (220V/50Hz)
RECEPTACLE FOR R1119, R1120
J2001
AF TO TELEX
GROUND
+8V
AF TO TELEX
-45V
AF FROM Tx
+22V
Rx-BLOCK
EXT. LOUDSPEAKER (OFF WHEN DUPLEX)
22V TO KEY
Rx-BLOCK
AF TO Tx
SIMPLEX RELAY Rx
EXT. LOUDSPEAKER
GROUND TO EXT. LOUDSPEAKER
N1400 OR N1401 ⟷ R1119 OR R1120
R1119 OR R1120 ⟷ S1300 OR S1301
N1400 OR N1401 ⟷ S1300 OR S1301
N1400 OR N1401 ⟷ T1127 OR H1200
REAR CONTACTBOARD ⟷ R1119 OR R1120
REAR CONTACTBOARD ⟷ S1300 OR S1301
REAR CONTACTBOARD ⟷ N1400



RECEPTACLE IS SEEN FROM THE FRONTSIDE

PLUG IS SEEN FROM BEHIND

WHEN NO WIRE SIZE IS GIVEN, THE SIZE IS 0,25□

©

INTERCONNECTION CABLE FOR SAILOR SHORT-WAVE PROGRAM 1000