

# Sailor

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**INSTRUKTIONSBOG FOR  
SAILOR T1127/T1127L**

**INSTRUCTION BOOK FOR  
SAILOR T1127/T1127L**



**A/S S. P. RADIO · AALBORG · DENMARK**

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## 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.

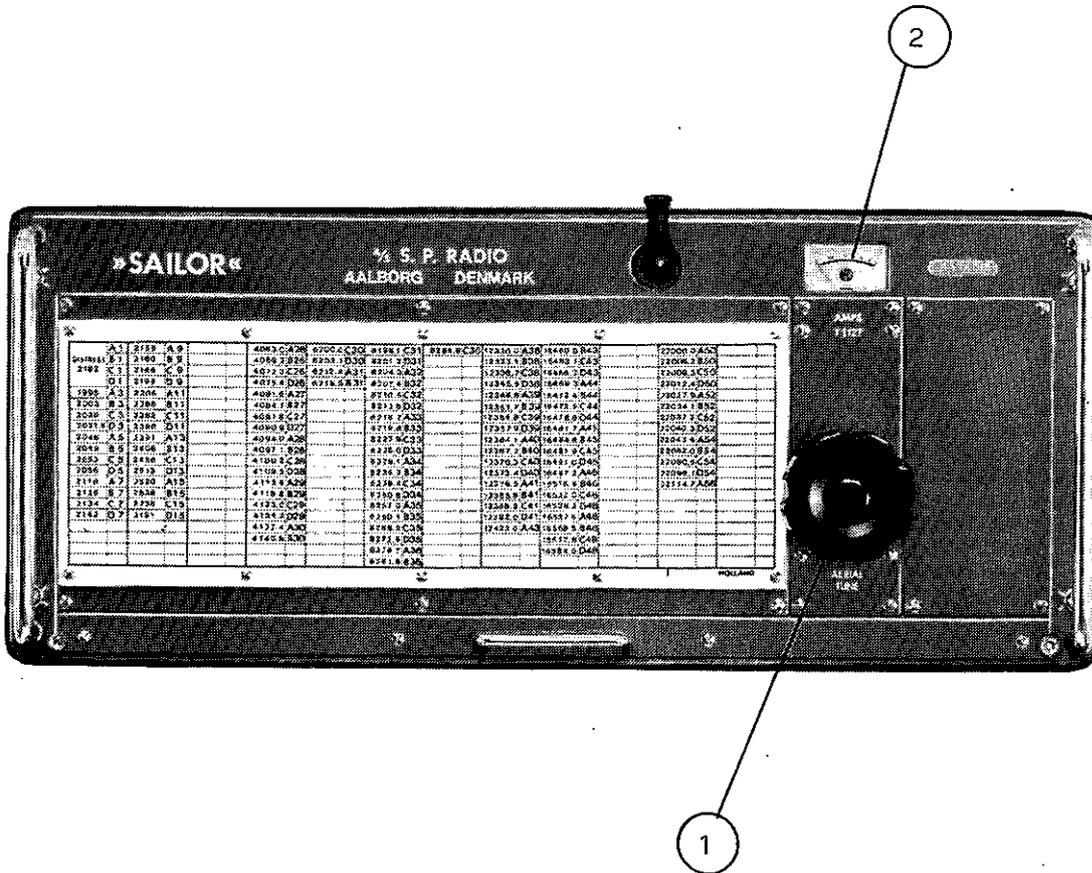
Distress call: )

Modulation: )

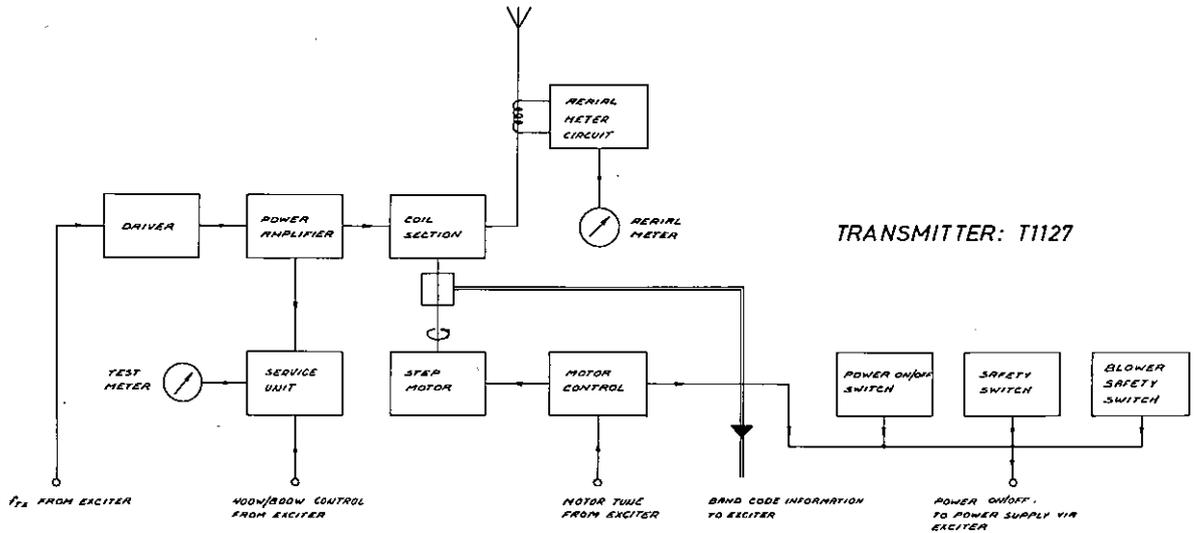
Temperature range: -15°C to +55°C

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

# CONTROLS



## PRINCIPLE OF OPERATION



### TRANSMITTER T1127

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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.

#### C.T. band 1.6 - 4 MHz:

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.

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TUNING-UP PROCEDURE cont.:

Band MHz	Letter on the drum switch
2.182 .....	A *
1.6 - 1.7999 .....	B
1.8 - 1.9999 .....	D
2.0 - 2.1999 .....	F
2.2 - 2.3999 .....	H
2.4 - 2.5999 .....	K
2.6 - 2.7999 .....	M
2.8 - 3.0999 .....	O
3.1 - 3.3999 .....	Q
3.4 - 3.6999 .....	R
3.7 - 4.0 .....	S
* When T1127L then	
2,182 MHz .....	T
0.4 - 0.5999 MHz .....	A

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 must always be in position OFF (anode voltage OFF).

8. Tuning of aerial coil.  
Set POWER switch to pos. ON (transmitter start) and tune AERIAL TUNE knob for AERIAL METER peak reading. If a peak cannot be obtained, set POWER switch to pos. OFF (transmitter stop) and activate by means of the alignment tool contact 11. Start transmitter and check if a peak is obtainable. Stop transmitter. If a peak can still not be obtained then activate both contact 11 and 13 and now a peak is obtainable.

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

TUNING-UP PROCEDURE cont.:

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 8.

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 8 on this frequency and re-check on the lowest frequency in the band.

12. 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 4.

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

DISTRESS 2182 kHz.

14a. Standard version.

Select 2182 kHz and tune as described above except point 8, which is altered to:

Activate contact 53, start transmitter 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 transfer the alignment tool to position 54 and tune AERIAL TUNE 2182 kHz for max. AERIAL METER deflection.

14b. Dutch version,

Select 2182 kHz and tune as described above.

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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.

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TUNING-UP PROCEDURE cont.:

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<sub>1</sub>, 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 without 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<sub>1</sub>, 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 <sup>x</sup> at fig. 1.
6. Set TEST SWITCH to pos. Ik<sub>1</sub>, 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.

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## SERVICE

1. MAINTENANCE
2. NECESSARY TEST EQUIPMENT
3. TROUBLE-SHOOTING
4. PERFORMANCE CHECK
5. ADJUSTMENT PROCEDURE
6. NECESSARY ADJUSTMENTS AFTER REPAIR
7. FUNCTION CHECK
8. MECHANICAL DISASSEMBLING T1127 ONLY

### 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 measurements 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.) <u>+2%</u> E.g. PHILIPS PM2503
X	X			<u>MULTIMETER:</u> Sensitivity 0.3V and 3A Input impedance 30 Kohm/V Accuracy (f.s.d.) <u>+1%</u> 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
		X	
			X
		X	X
			X

TONEGENERATOR:

Frequency range 200 - 3000 Hz  
 Output 1V RMS  
 Output impedance  $\leq 600$  ohm  
 E.g. PHILIPS PM5107

AF VOLTMETER:

Sensitivity (f.s.d.) 300 mV  
 Input impedance  $\geq 4$  ohm  
 Accuracy (f.s.d.)  $\pm 5\%$   
 Frequency range 100 Hz - 5 kHz  
 E.g. PHILIPS PM2503

FREQUENCY COUNTER:

Frequency range 100 Hz - 40 MHz  
 Resolution 0.1 Hz at  $f \geq 10$  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

SIGNAL GENERATOR:

Frequency range 550 kHz - 30 MHz  
 R1118: 100 kHz - 30 MHz  
 Output impedance 50/75 ohm  
 Output voltage 1 uV - 100 mV EMF  
 Modulation AM, 30%, 1000 Hz  
 E.g. PHILIPS PM5326

NECESSARY TEST EQUIPMENT cont.:

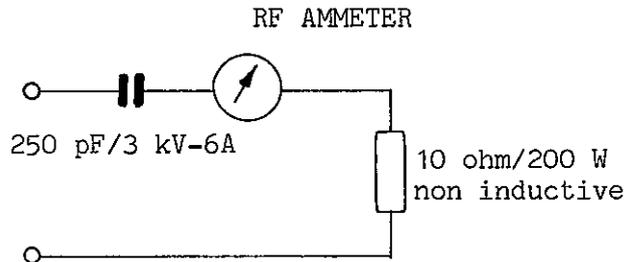
T1127	N140X	S1300	R1117	
X				<p><u>POWER SUPPLIES:</u></p> <p>T1127:</p> <p>V<sub>out</sub> 26.5V DC</p> <p>I<sub>out</sub> 60A DC</p> <p>E.g. 2 pcs. LAMBDA type LMG24</p>
		X	X	<p>R1117/S1300:</p> <p>V<sub>out</sub> 1 22V</p> <p>I<sub>out</sub> 1 1.5A</p> <p>V<sub>out</sub> 2 -45V</p> <p>I<sub>out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

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NECESSARY TEST EQUIPMENT cont.:

T1127	N140X	S1300	R1117
X			
			X
			X

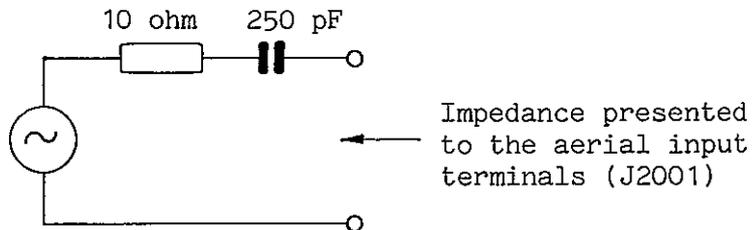
DUMMY LOAD for C.T. band 1.6 MHz to 4 MHz



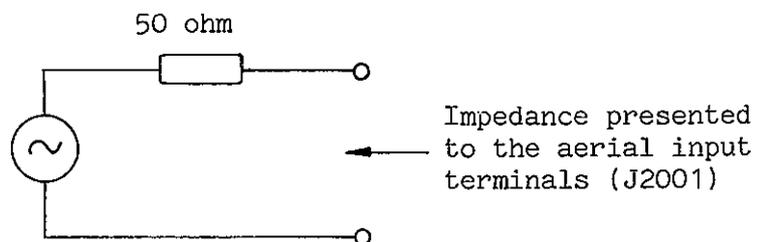
E.g. DRALORIC 06 1291 TD 20x50 L  
8 KV<sub>S</sub> 250 pF +20% R85

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

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



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  $13.5 \pm 1V$ .

### 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 \*  $3.3 \pm 0.3$  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 \*  $3.3 \pm 0.3$  scale div.

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

### 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  $4 \pm 0.6V$ .

4.4.4. Connect the voltmeter to TP1.

4.4.5. Check that the voltage is  $1.60 \pm 0.15V$ .

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  $2.7 \pm 0.2A$ .

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 ( $16.8 \pm 0.8$  dB).

PERFORMANCE CHECK FOR T1127 cont.:

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.

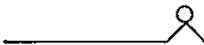
4.5.2.

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*

\* T1127L read T

4.6.

CHECK OF ANODE RESONANCE

4.6.1.

Set MAIN SWITCH to position ON and TEST SWITCH to position I<sub>k</sub>1.

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.

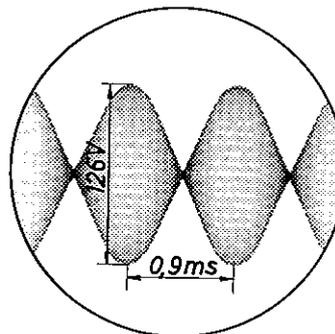
Mount the hexagon stud in the noted position.

4.6.7.

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

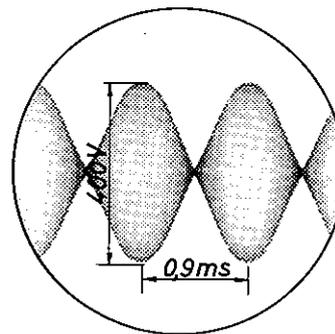
FREQUENCY SELECTOR SETTINGS		LETTER FACING THE CONTACTS
S1300 or S1300TT	S1301 MHz	
3C	4.125	C
3D	6.2155	E
4A	8.257	G
4B	12.392	I
4C	16.522	L
4D	22.062	N
5A	25.02	P

approx.  
120V



C.T. band measured across 10 ohm

approx.  
400V



HF band measured across 50 ohm

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.

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.

ADJUSTMENT PROCEDURE FOR T1127 cont.:

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.

ADJUSTMENT PROCEDURE FOR T1127 cont.:

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.

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.

A  
4/4

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

## 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.

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<sub>K1</sub>.
- 7.4.  
Select A3J mode and key the transmitter by means of the KEY plug.
- 7.5.  
Check that the TEST METER reading is  $3.3 \pm 0.3$  scale div.
- 7.6.  
Set TEST SWITCH to I<sub>K2</sub> and check that the TEST METER reading is  $3.3 \pm 0.3$  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<sub>K1</sub>, POWER switch to position ON and MOTOR switch to position AUTOM.

7.13.  
Mount the two front panel covers.

\* Canadian version:  $4 \pm 0.3$  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.

MECHANICAL DISASSEMBLING FOR T1127 cont.:

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.

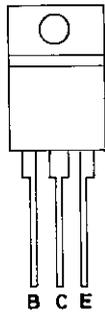
Unscrew the four screws which retain  
the motor (see fig. 5).

8.5.3.

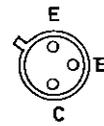
It is now possible to take out the  
motor.

TOP VIEW

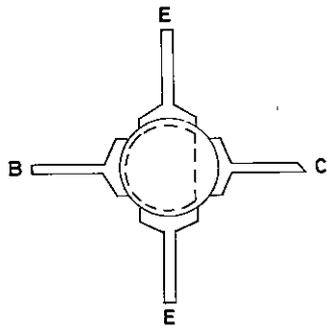
BOTTOM VIEW



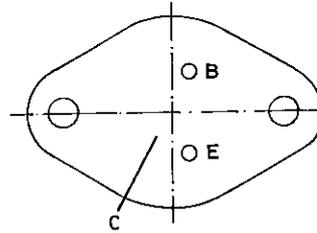
BD 241 A



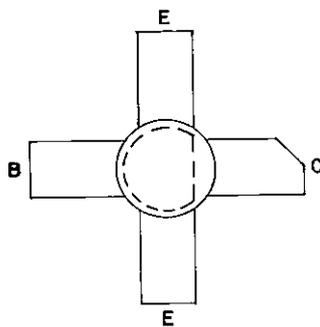
BC 141-10



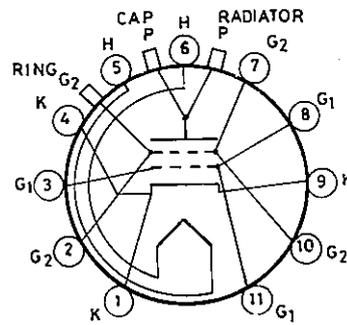
ZRF 0132



MJ 802

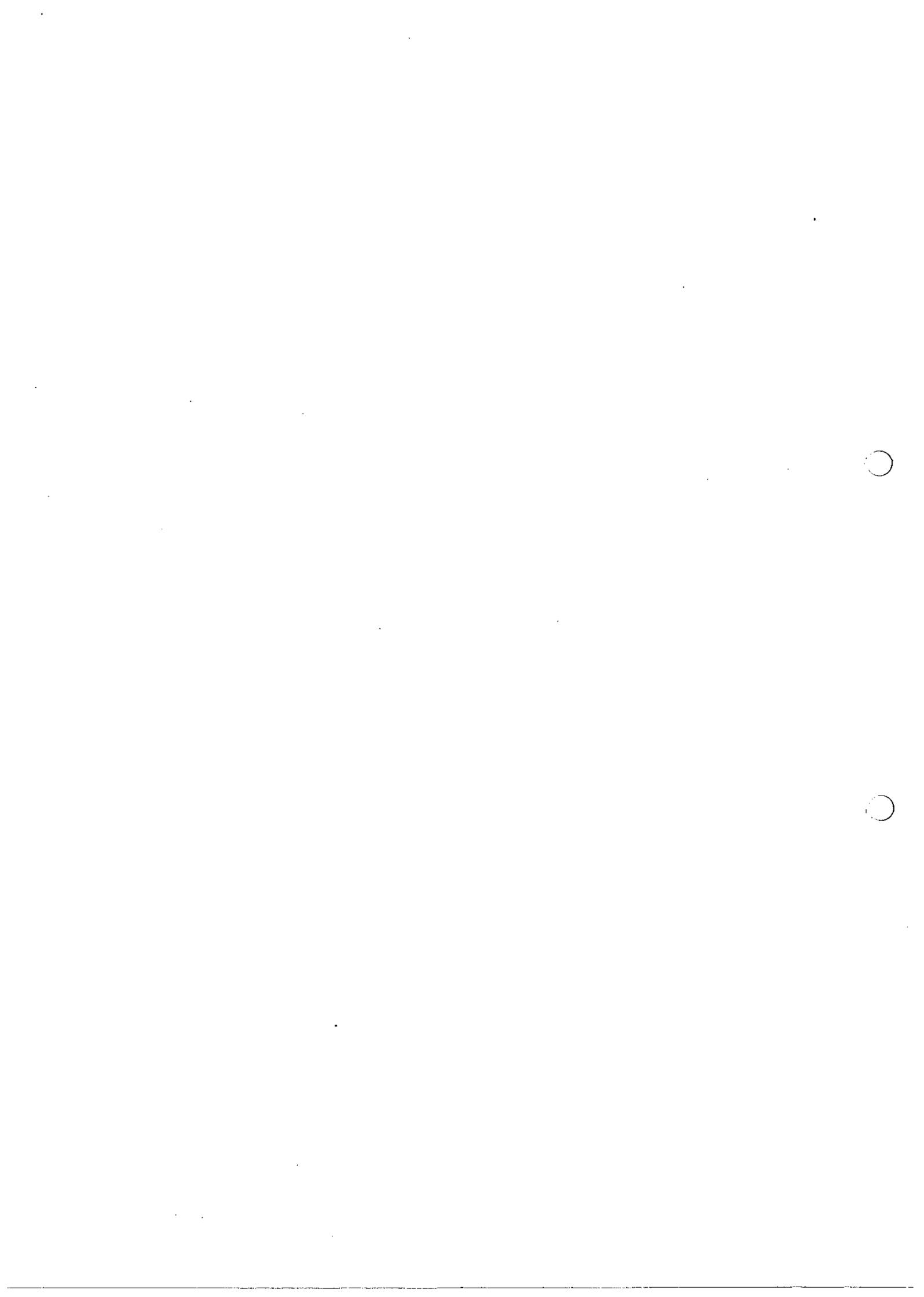


MRF 401 mp



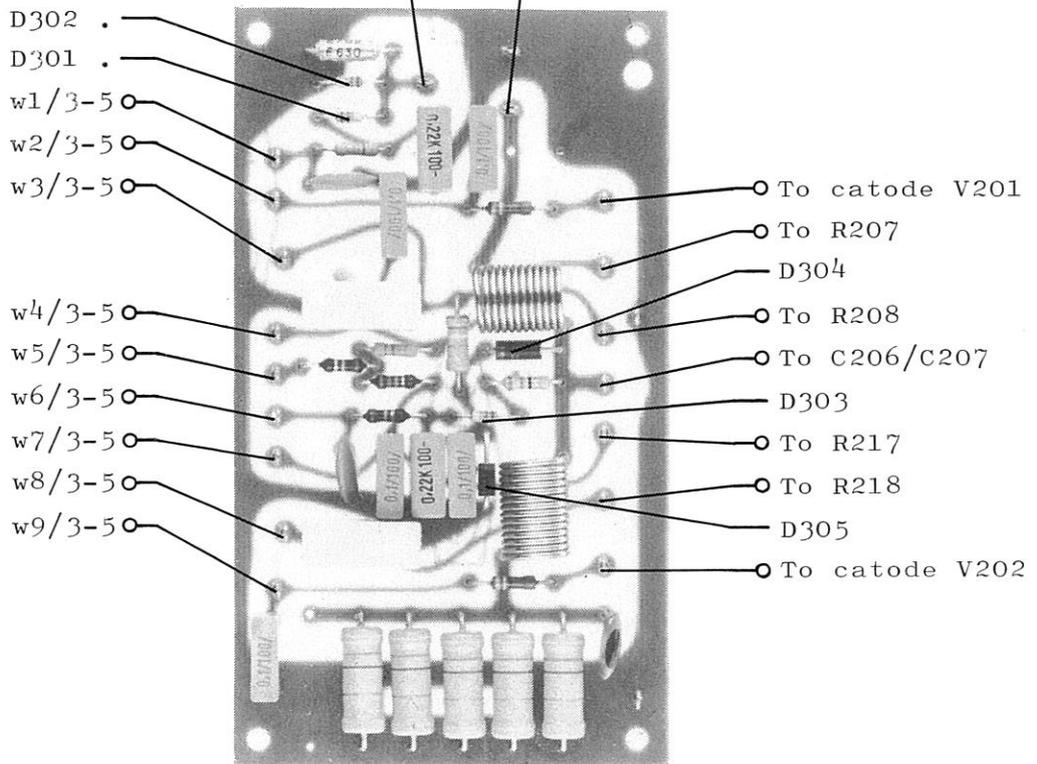
8122

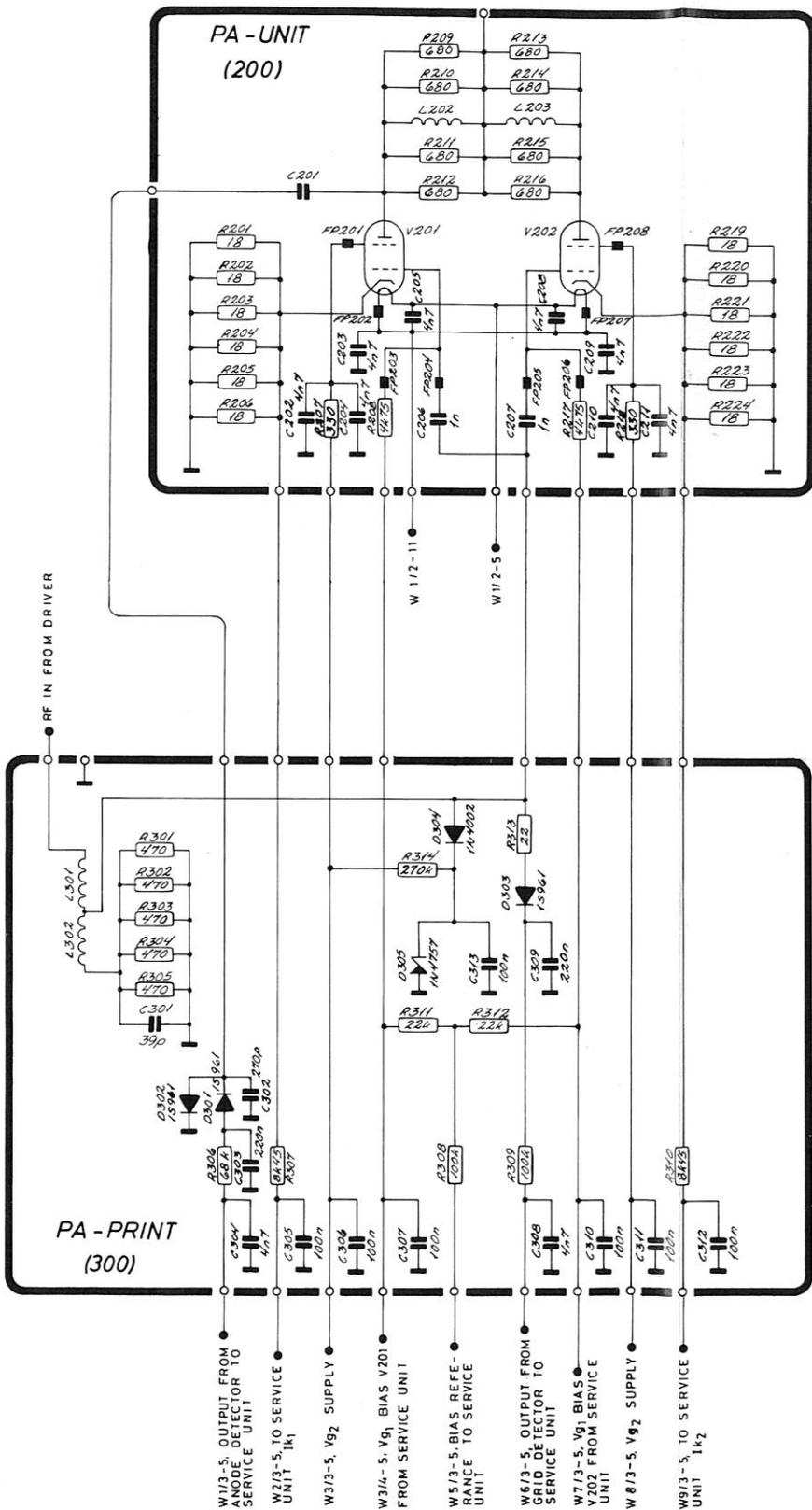
A



To C201

From DRIVER



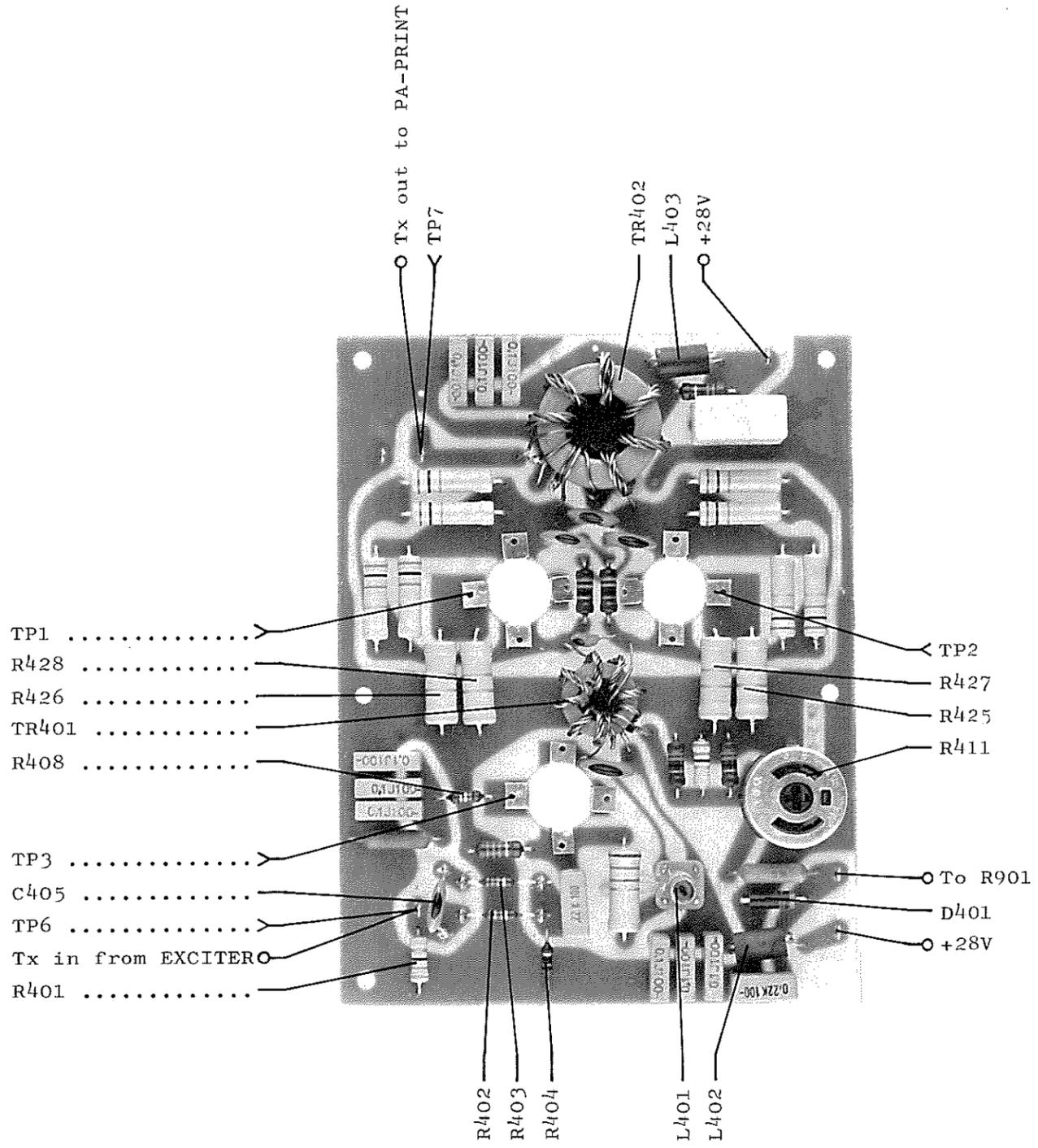


PA - UNIT  
(200)

RF IN FROM DRIVER

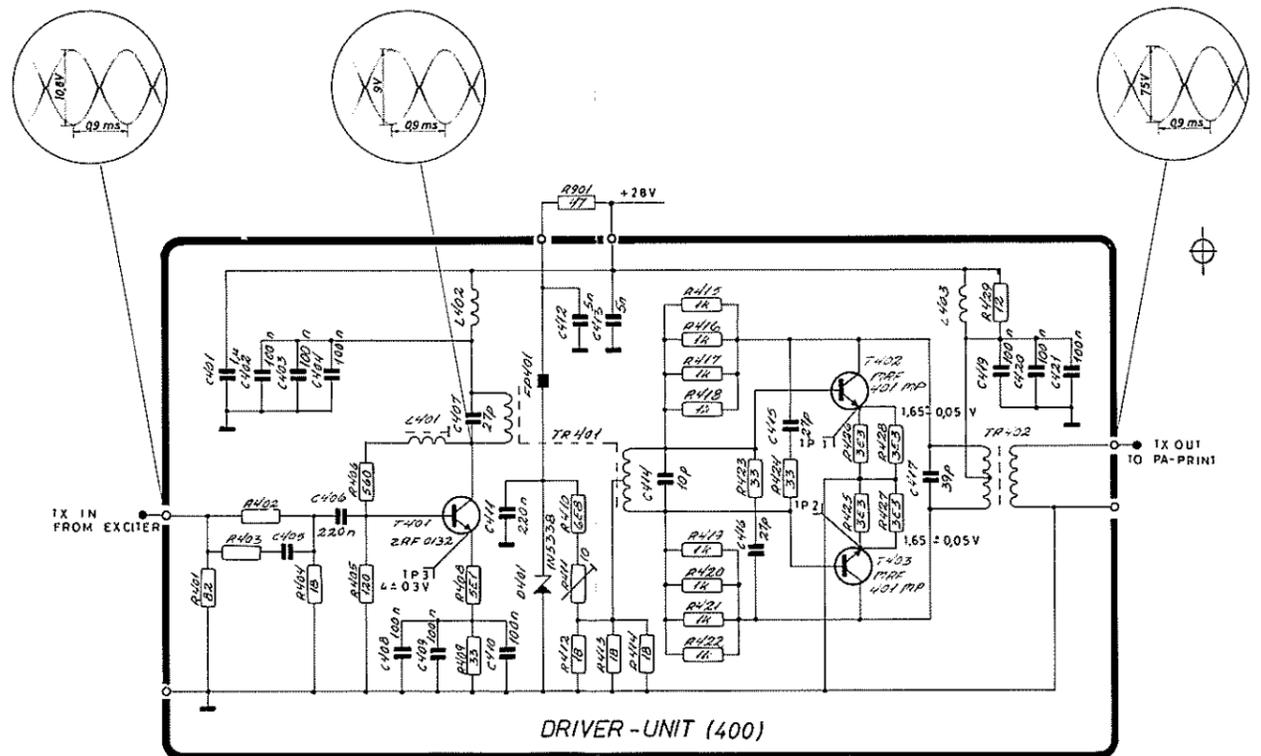
PA - PRINT  
(300)

- W113-5, OUTPUT FROM ANODE DETECTOR TO SERVICE UNIT
- W13-5, TO SERVICE UNIT 1k1
- W13-5, Vg2 SUPPLY
- W14-5, Vg1 BIAS FROM SERVICE UNIT
- W513-5, BIAS REFERENCE TO SERVICE UNIT
- W613-5, OUTPUT FROM GRID DETECTOR TO SERVICE UNIT
- W713-5, Vg1 BIAS FROM SERVICE UNIT
- W813-5, Vg2 SUPPLY
- W913-5, TO SERVICE UNIT 1k2

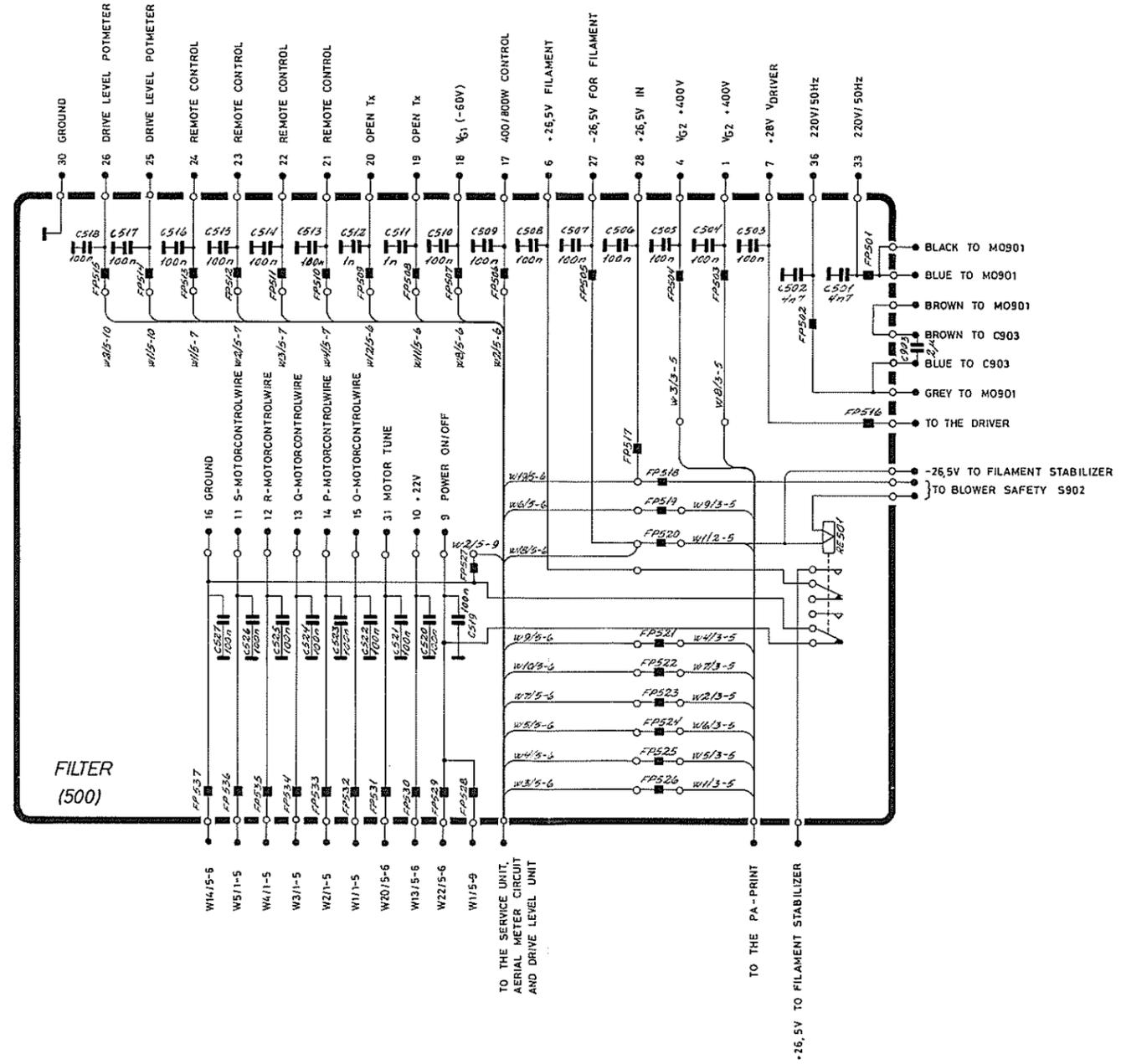
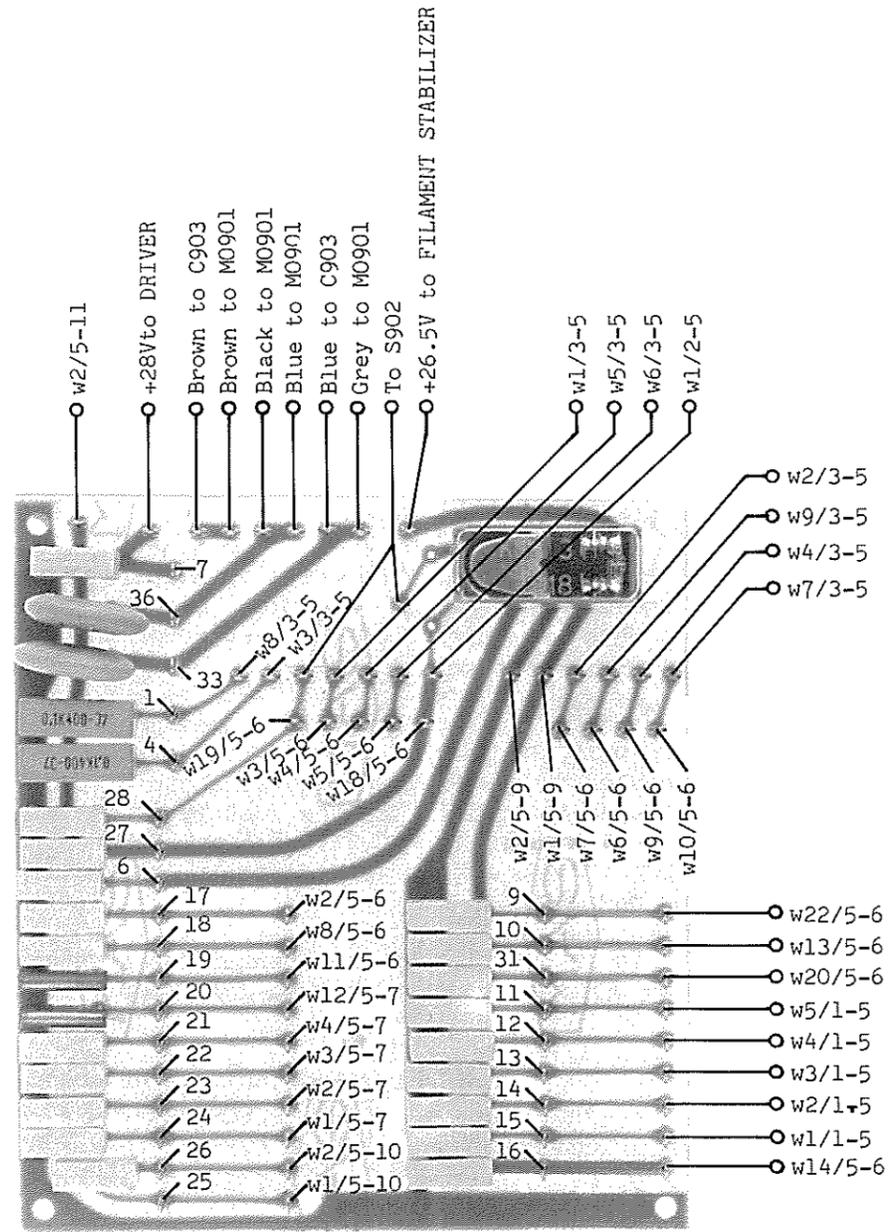


TEST CONDITIONS

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 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 (M0101) 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.

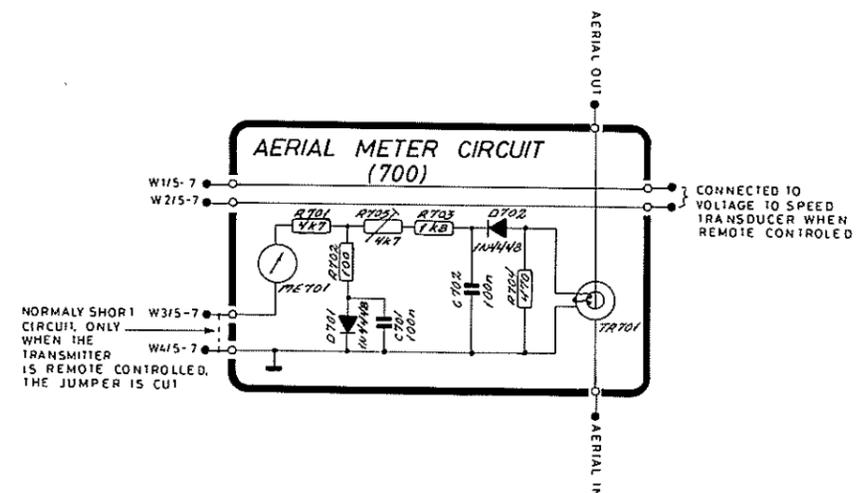
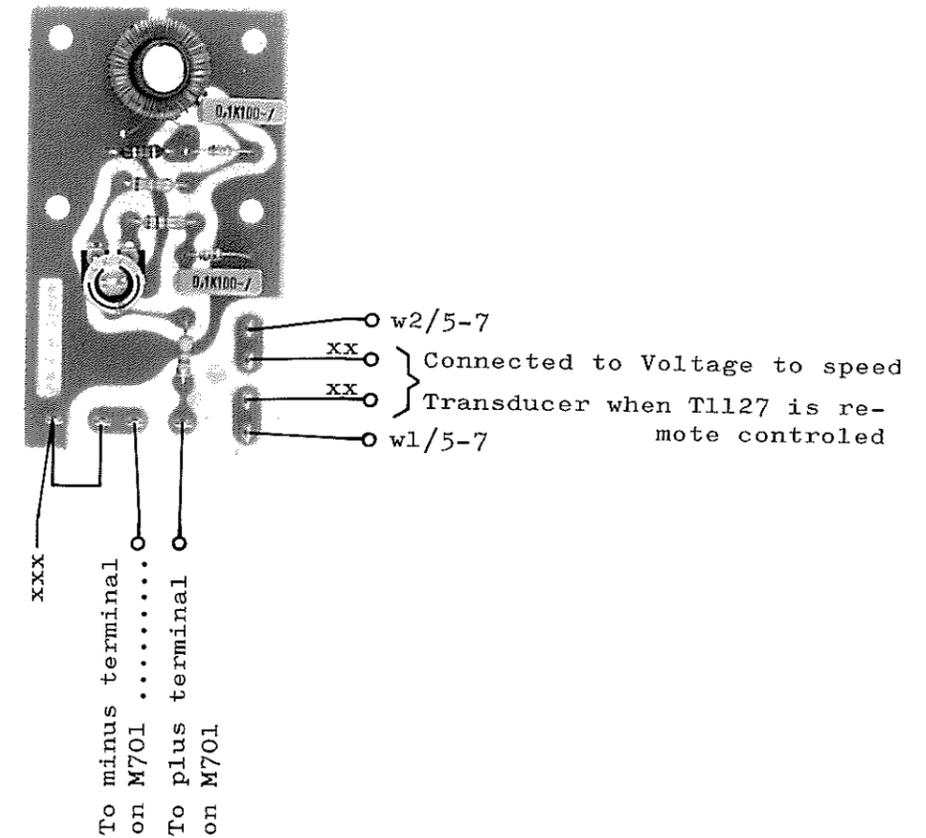
The zero signal currents in the PA tubes are adjusted by means of R606 and R607. The relay RE603 is opened when the transmitter is not keyed and the negative grid bias is then -60V to ensure that the tubes are cut off.



# CIRCUIT DESCRIPTION AERIAL METER CIRCUIT T1127

## AERIAL METER CIRCUIT

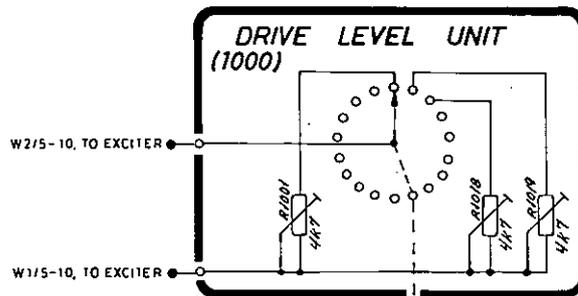
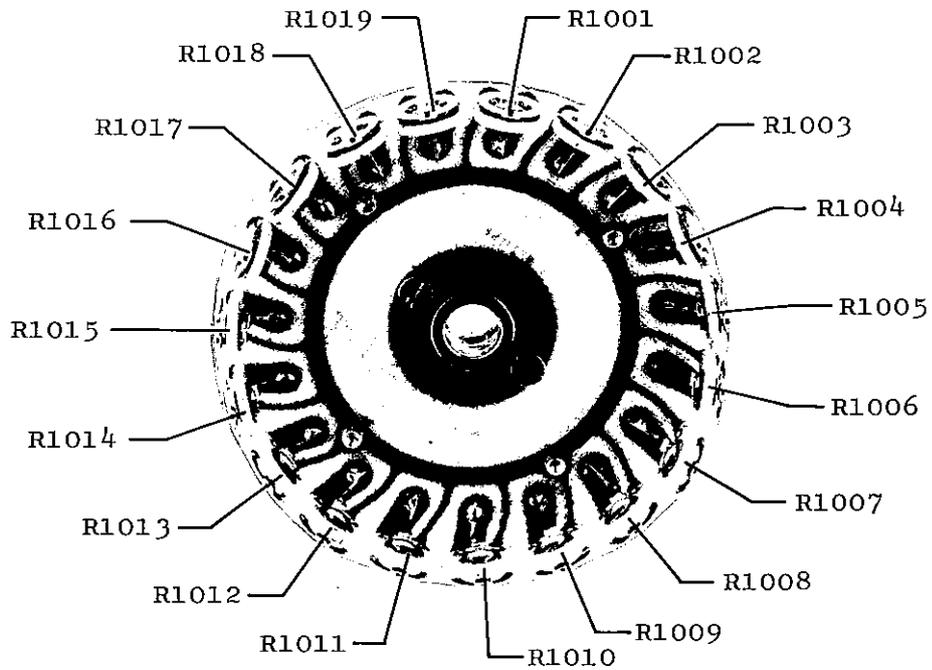
The voltage from the current transformer TR701 is rectified in a peak rectifier (D702 and C702) and fed into a voltage divider. When the aerial current is below 1 Amp., the meter sensitivity is determined by R701, R703, and R705. If the aerial current is above 1 Amp., D701 is on and the meter sensitivity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



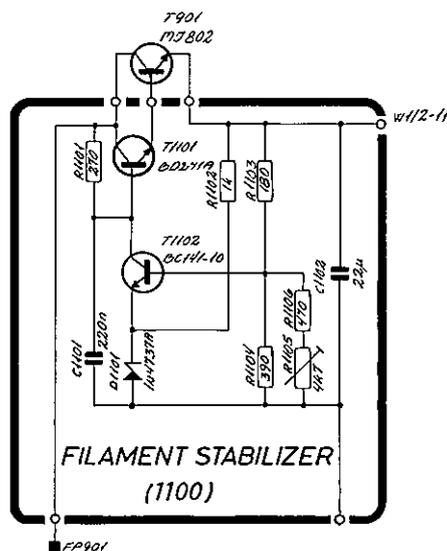
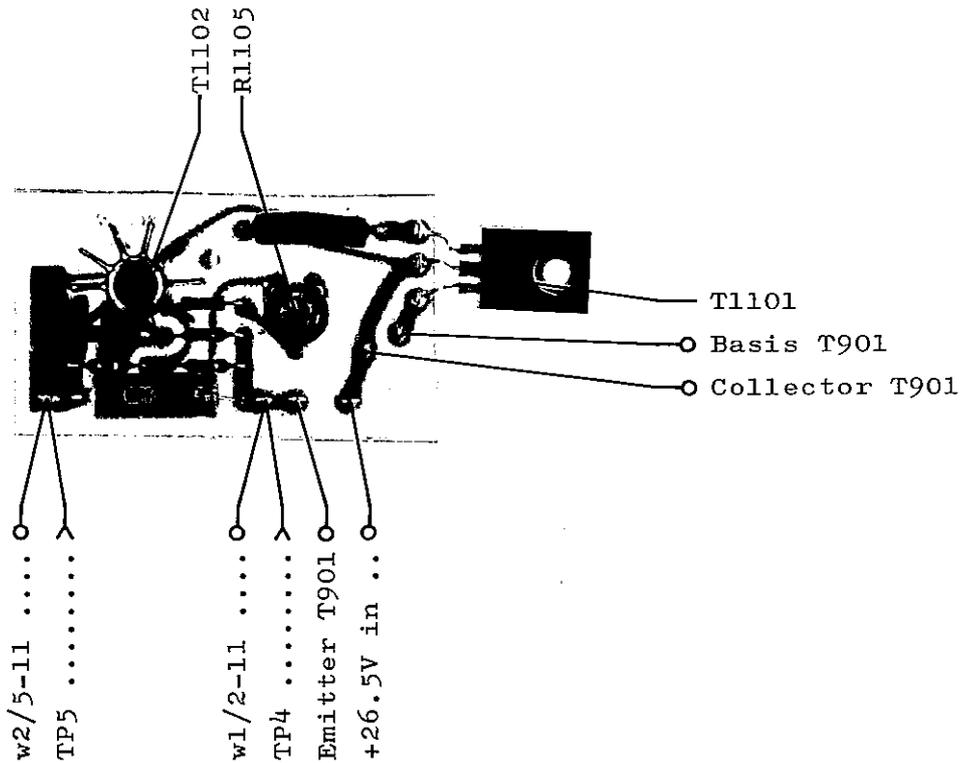
MECHANICAL  
CONNECTED TO  
DRUMSWITCHES

A1/1 T1127

# 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.



A1/1 T1127

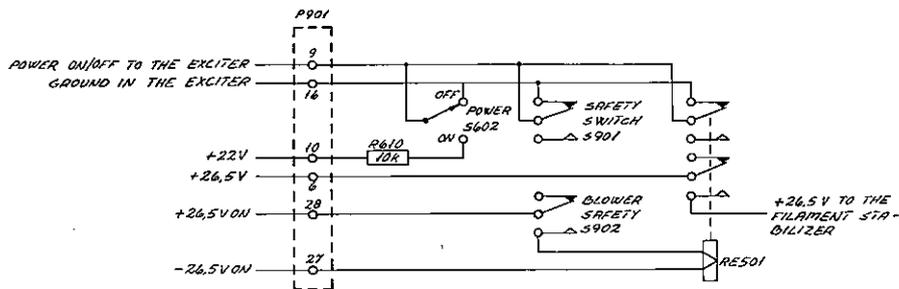
# CIRCUIT DESCRIPTION SAFETY CIRCUIT T1127

## 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 <sub>A</sub>		
	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	X				
M	X	X		X			X			X																			
N			X	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	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																	

Positions of factory programmed studs (round studs).

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													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		X												

C 2/2

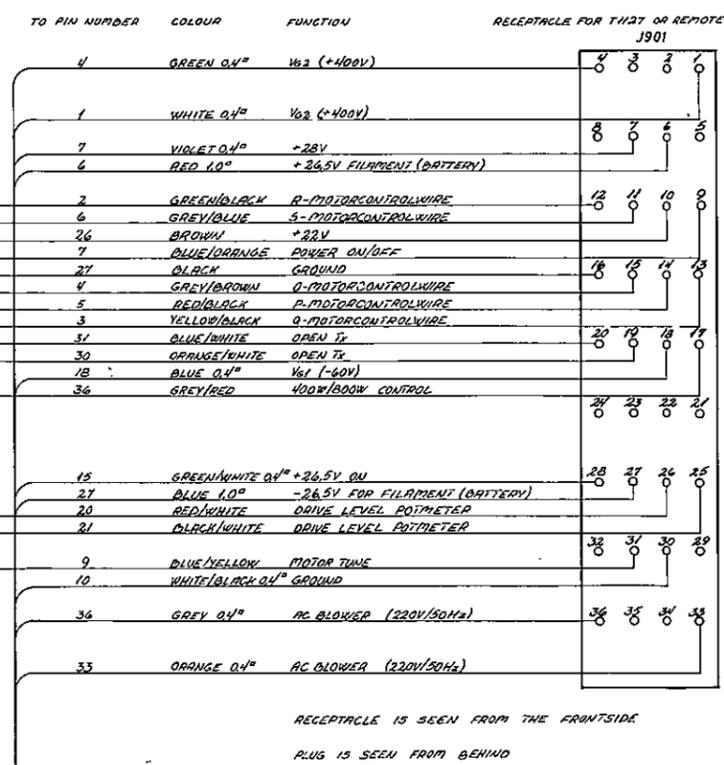
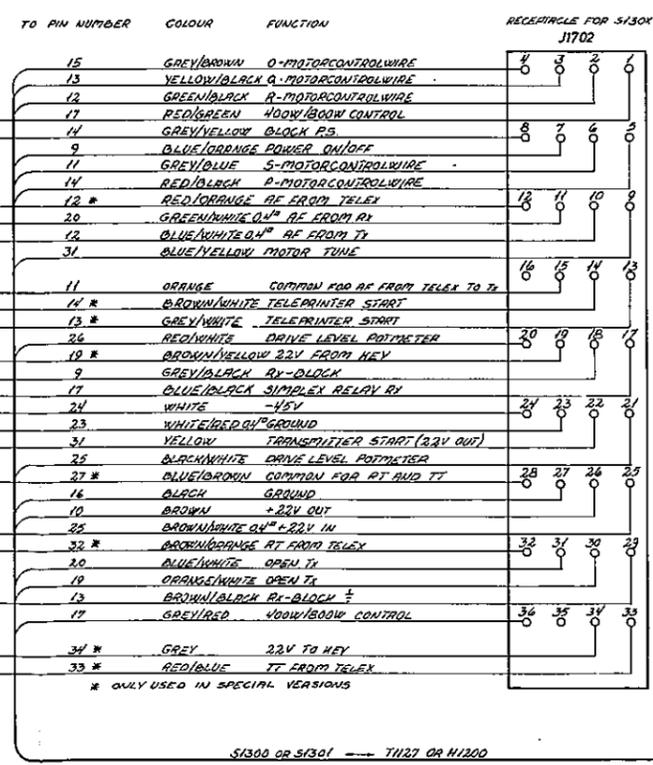
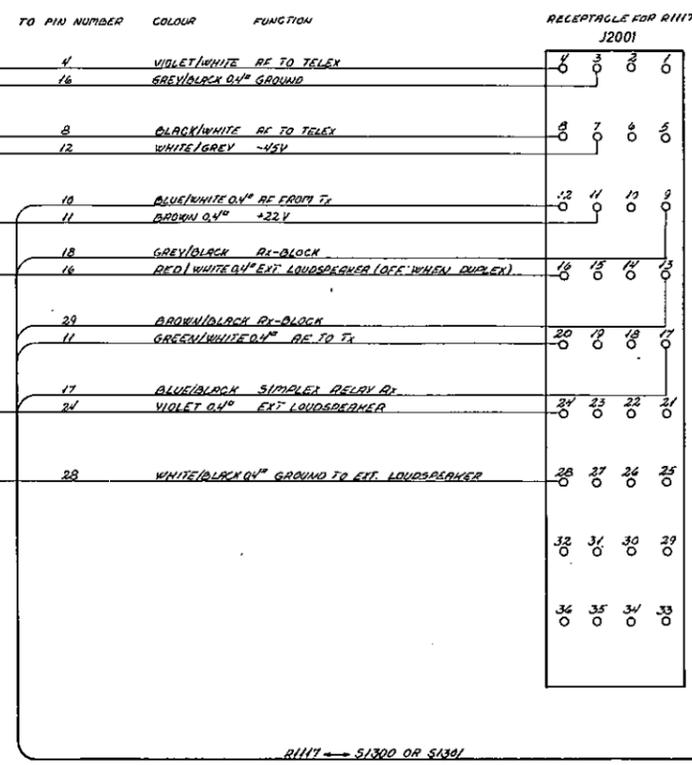
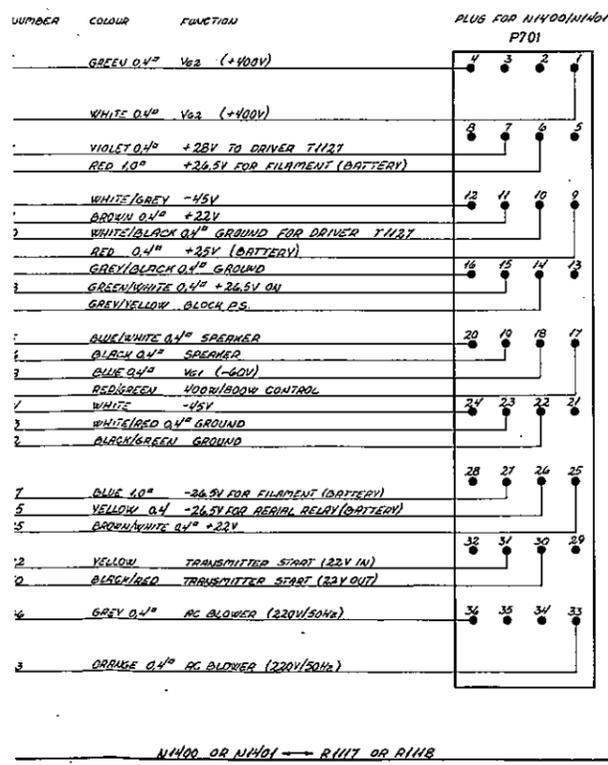
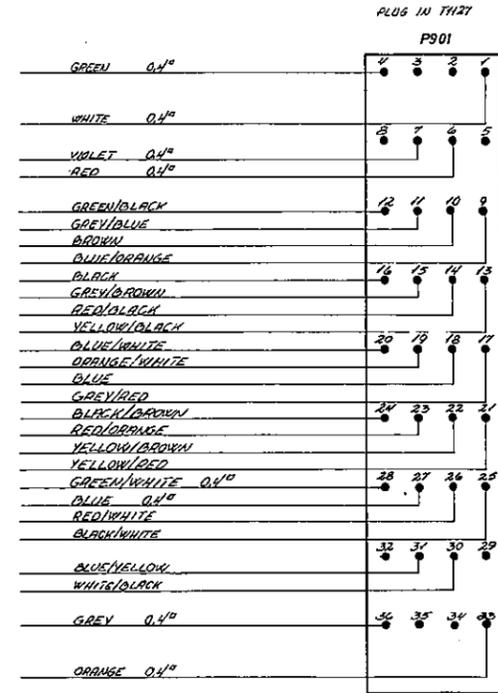
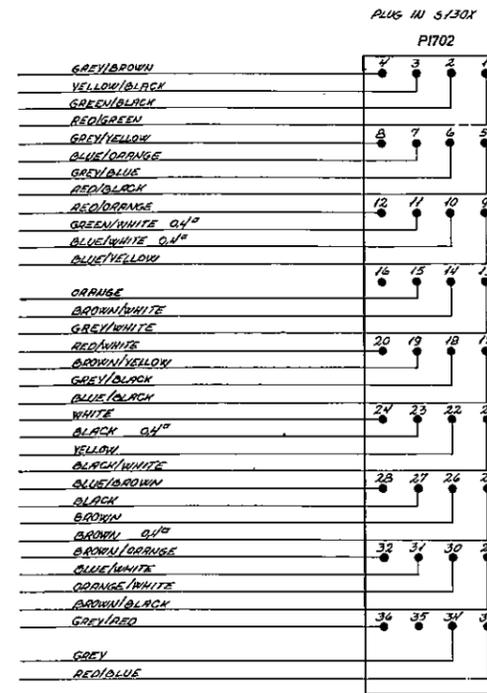
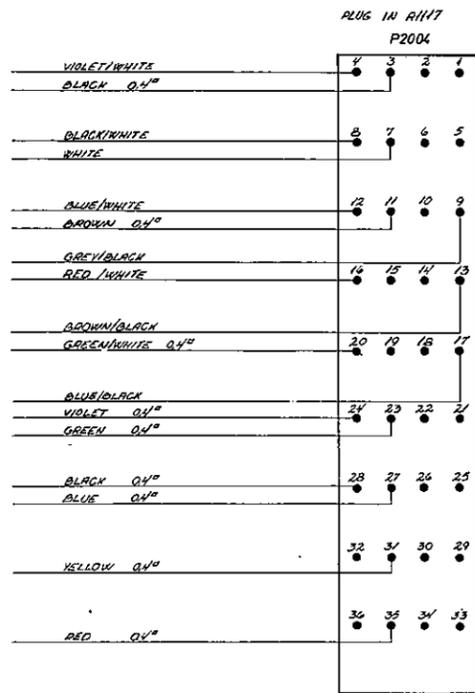
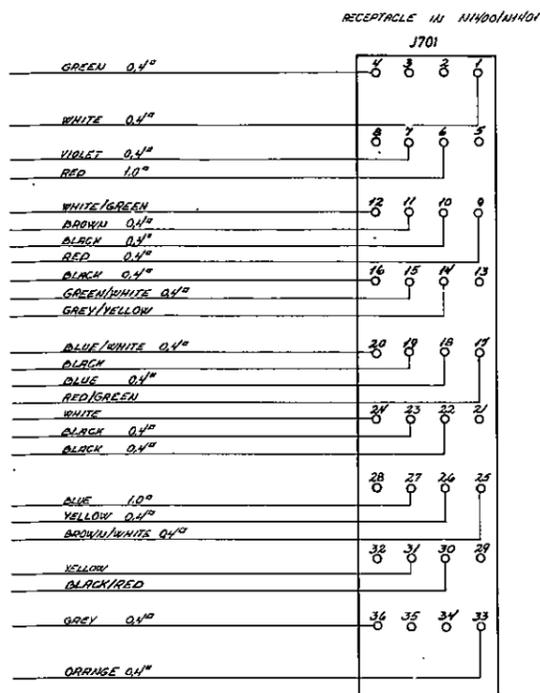
Lower drum

Pos.	Range										Aerial coil MF			Aerial coil HF														CA		
	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		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																		

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RECEPTACLE IS SEEN FROM THE FRONTSIDE  
PLUG IS SEEN FROM BEHIND  
WHEN NO WIRE SIZE IS GIVEN, THE SIZE IS 0.25"

(B) INTERCONNECTION CABLE FOR SAILOR  
SHORT-WAVE PROGRAM 1000

REAR CONTACT BOARD → S1300 OR S1301

S1300 OR S1301 → TH27 OR H1200

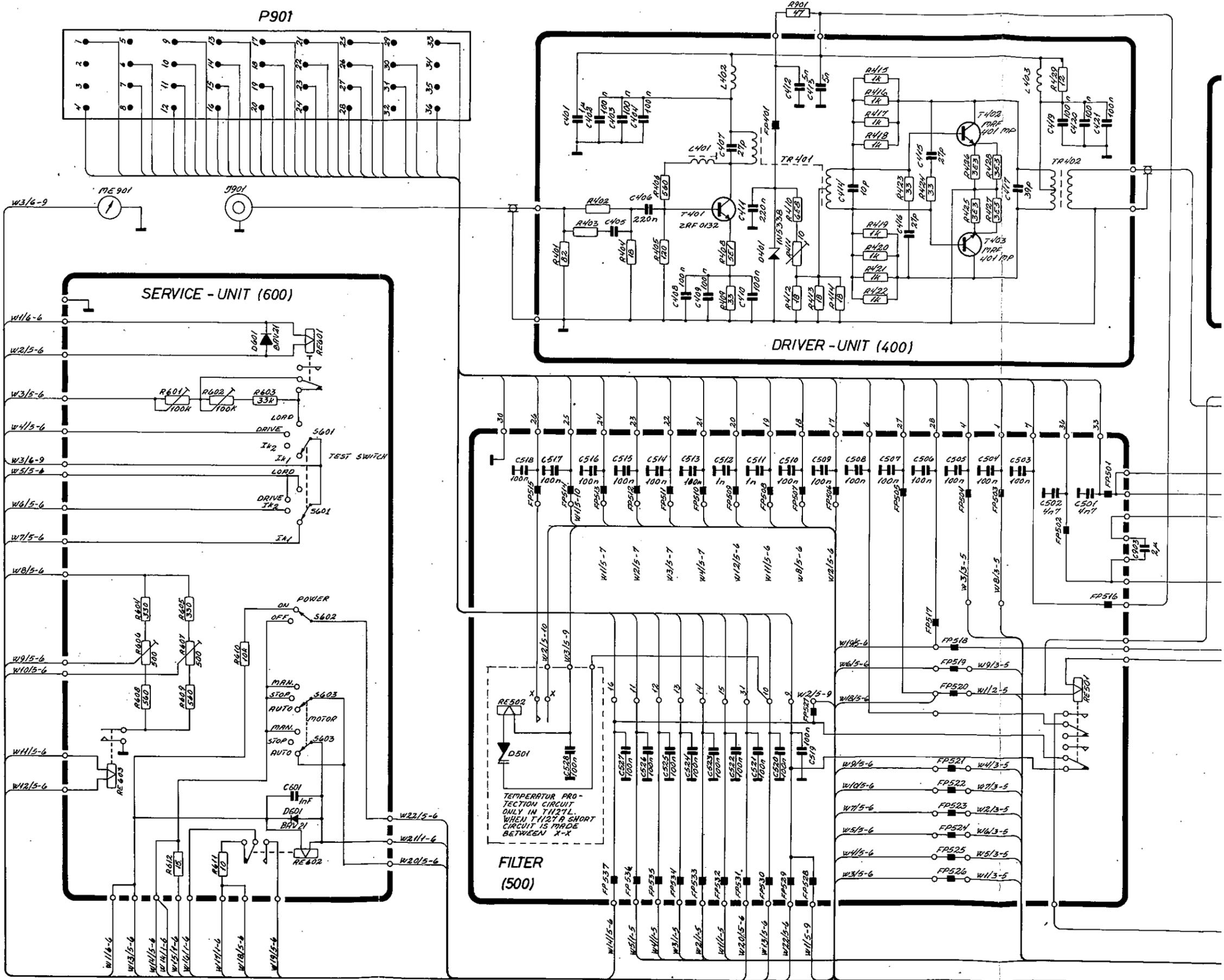
NH400 OR NH401 → S1300 OR S1301

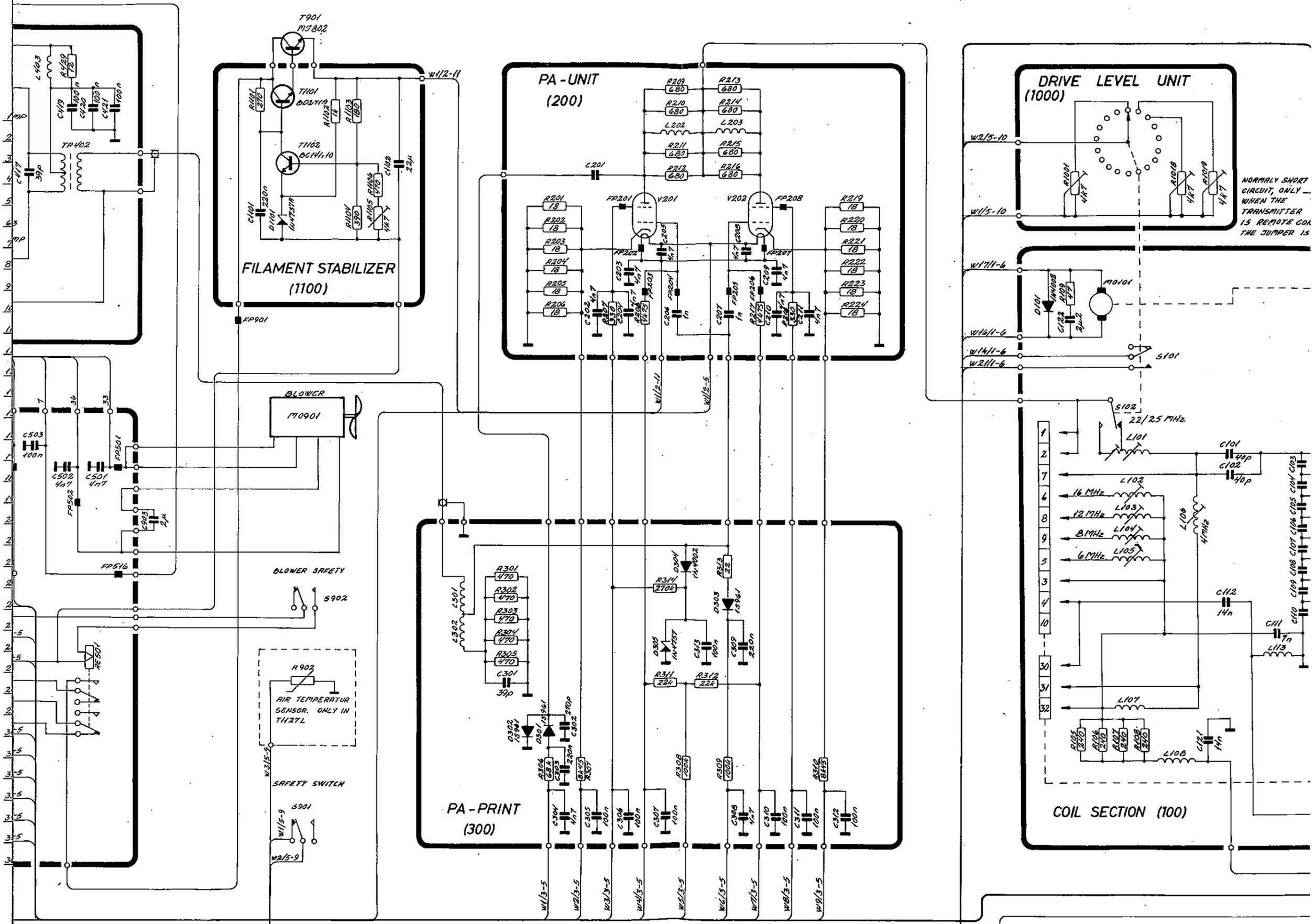
NH400 OR NH401 → TH27 OR H1200

NH400 OR NH401 → RH17 OR RH18



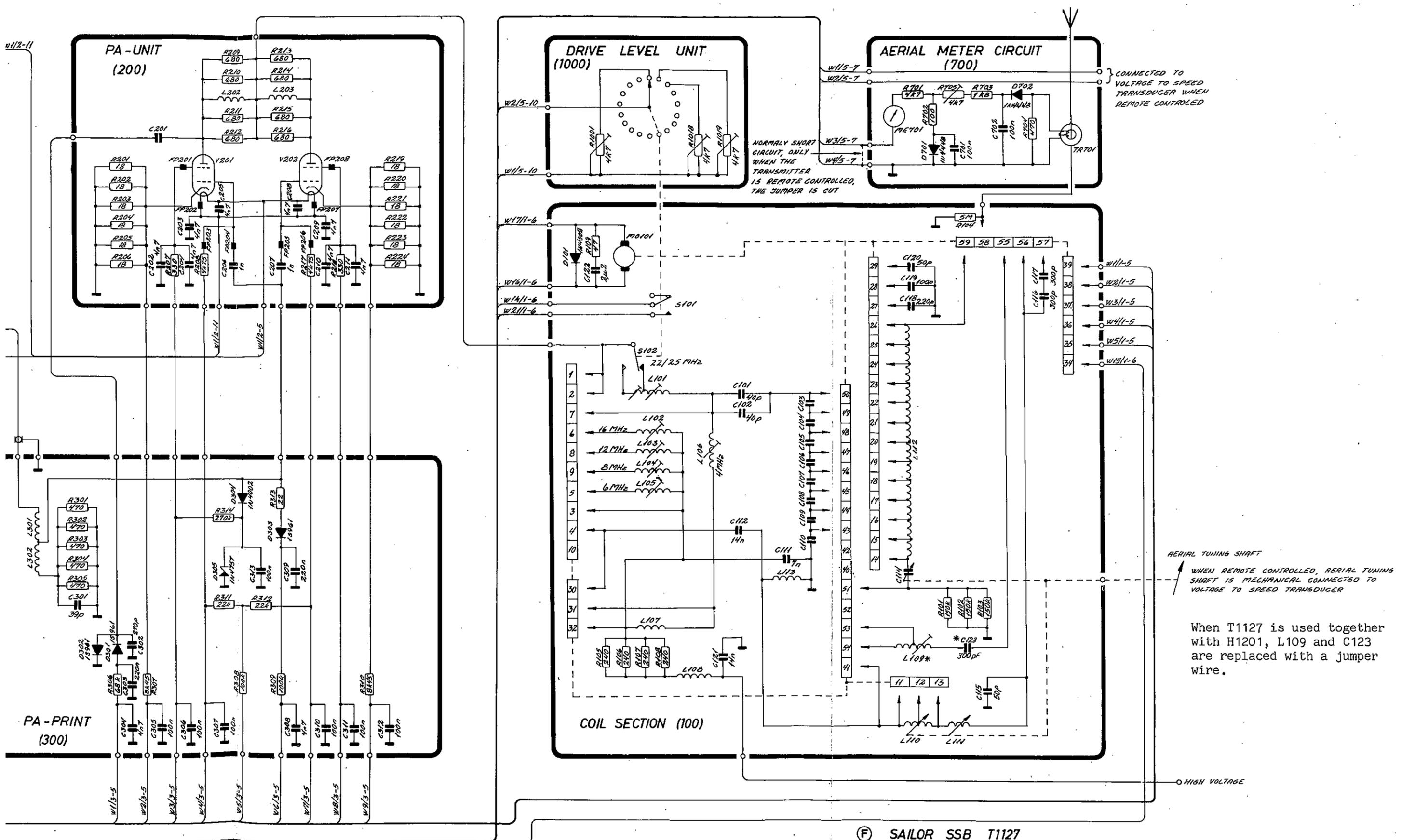
- 1 V<sub>G2</sub> (+400V)
- 2
- 3
- 4 V<sub>G2</sub> (+400V)
- 5
- 6 +26.5V FILAMENT
- 7 +28V
- 8
- 9 POWER ON/OFF
- 10 +22V
- 11 S-MOTOR CONTROL WIRE
- 12 R-MOTOR CONTROL WIRE
- 13 Q-MOTOR CONTROL WIRE
- 14 P-MOTOR CONTROL WIRE
- 15 O-MOTOR CONTROL WIRE
- 16 GROUND
- 17 100/800W CONTROL
- 18 V<sub>G1</sub> (-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)





NORMALLY SHORT CIRCUIT, ONLY WHEN THE TRANSMITTER IS REMOTE COIL THE JUMPER IS

COIL SECTION (100)



CONNECTED TO VOLTAGE TO SPEED TRANSDUCER WHEN REMOTE CONTROLLED

NORMALLY SHORT CIRCUIT, ONLY WHEN THE TRANSMITTER IS REMOTE CONTROLLED, THE JUMPER IS CUT

AERIAL TUNING SHAFT  
 WHEN REMOTE CONTROLLED, AERIAL TUNING SHAFT IS MECHANICAL CONNECTED TO VOLTAGE TO SPEED TRANSDUCER

When T1127 is used together with H1201, L109 and C123 are replaced with a jumper wire.

HIGH VOLTAGE

Ⓢ SAILOR SSB T1127