

respective channels to the external group, when this very group is plugged in. The respective group of loudspeakers inside the console is then being disconnected so that the channel in question operates the external group only. It is free to you to use either the switchover jack marked 1 or 2 or both of them. Using two outside groups, all the loudspeakers incorporated inside the console are being disconnected and are not in use.

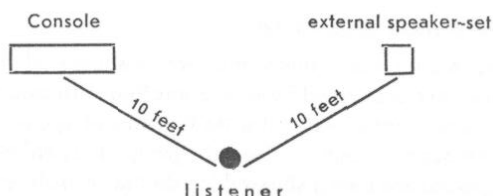
Monaural Reproduction

When playing normal (monaural) records the stereo button should not be depressed, otherwise some undesired noise could be reproduced.

Position of console and additional external group of speakers

Arrange console and external speaker-set in such a position, so that the sound from the two units is directed towards the listener. The set of external speakers should be placed (not under 10 ft.) either to the right or the left of the console.

You can fully enjoy stereophonic sound only, when you are sitting not too close to the speakers. The most favourable spot to sit is on the middle line between console and set of speakers.



Tone control in stereophonic reproduction

The stereophonic effect is always at its highest with the full trebles (treble control knob turned to the extreme right).

Connection of the additional speakers

Any good loudspeaker of at least 6 watts and 4,5 Ohm impedance can be used for this purpose. It is plugged in the jacks marked number 1 and 2 on the back-plate of the console.

The technical arrangements can be checked on the wiring diagram supplied together with the set.

To achieve a maximum stereophonic effect the plug must be inserted in the right position. When you get the impression that the sound picture is not balanced or that the orchestra is split up to the two sides of the speakers, the position of the connection plug has to be changed (reverse poles).

Technical Data:

No. of circuits	: 9 FM/7 AM circuits
Wave Bands	: FM (VHF)-Short, BC, Long
Speaker / 1. group	: 1 speaker 8 watts, 1 speaker 3/D, 2 tweeters
2. group	: 1 speaker 8 watts, 1 speaker 3/D, 2 tweeters
Mains Type and Voltage:	AC 110, 125, 160, 220, 240 volts, console is set on 110 volts. Changing the voltage one has to replace the electric bulb of the record player compartment (now for 110 V) as to the desired voltage
Power consumption	: approx. 55 watts
Fuse	one each 1 amp., slow-blow one each 0,16 amp., slow-blow
Dial lamps	: 2 lamps, 7 volts, 0,3 amp.
Valves / German types	: ECC 85, ECH 81, EF 89, EF 86, EF 86, EL 84, EL 84, EM 84, K 5/61 M, K 5/105, K 5/105, B 250 C 150
American Equivalents	: 6 AQ 8, 6 AJ 8, 6 DA 6, 6267, 6267, 6 BQ 5, 6 BQ 5, 6 FG 6, K 5/61 M, K 5/105, K 5/105, B 250 C 150



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Applicable to changes



How to operate your METZ-1706 full stereo



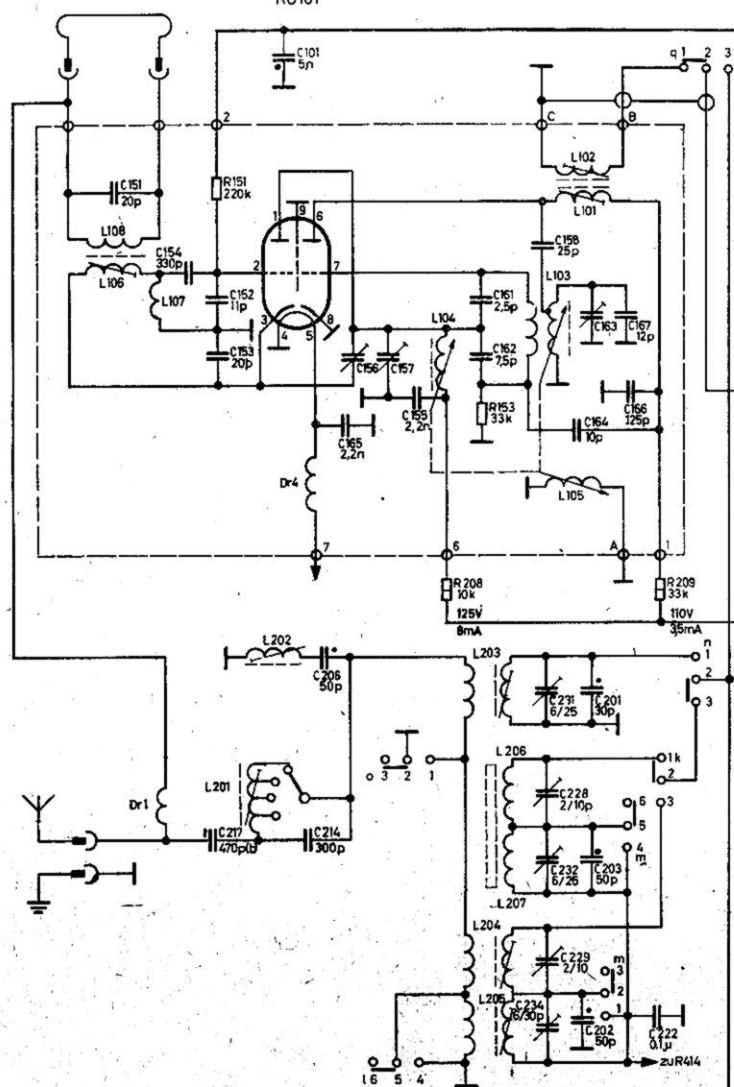
Switching on and selection of the wave band.

The push button control enables you to operate a considerable number of stages with ease. A push button selects the wave-bands, operates the record player, (switches the set on at the same time) connects the iron-core aerial, changes the wave band and switches the instrument off again.

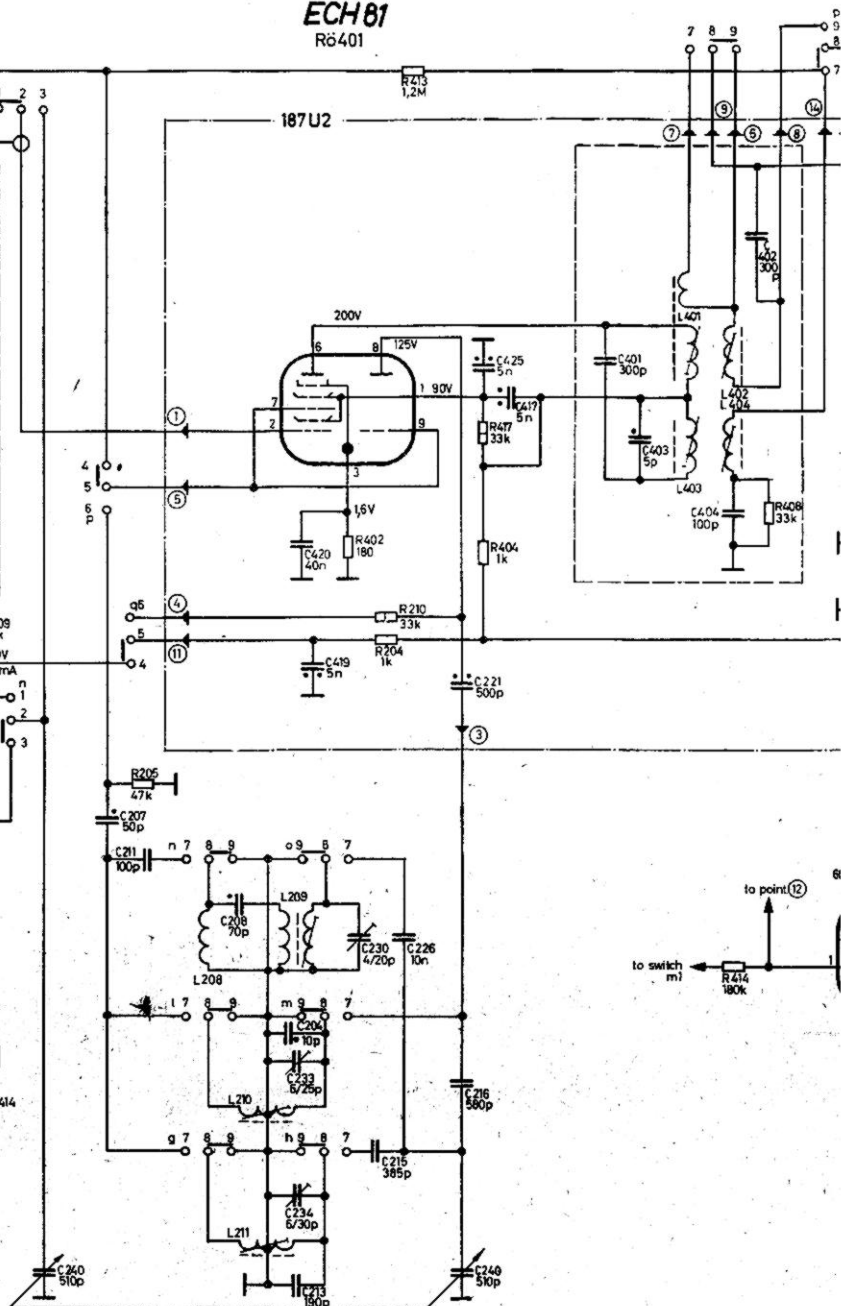
The buttons, from left to right, are:

Key 1: OFF	= Off-Switch
Key 2: PHONO	= Pick-up phono
Key 3: BAND W	= bandwidth switch
Key 4: LONG	= 860—2000 m = 350—148 Kc/S - Long Wave
Key 5: FERRITE	= ferrite aerial
Key 6: BC	= 182—582 m = 1650-515 Kc/S - Standard Broadcast
Key 7: SW	= 18,8—51 m = 16,2—5,9 Mc/S - Short Wave
Key 8: FM	= 2,7—3,4 m = 108—88 Mc/S - FM (VHF)

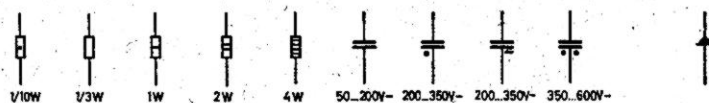
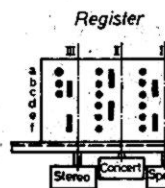
Rö 101



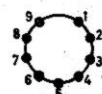
Rö401



Printed-circuit-plates 187U2, 202SP2 and 202SE1



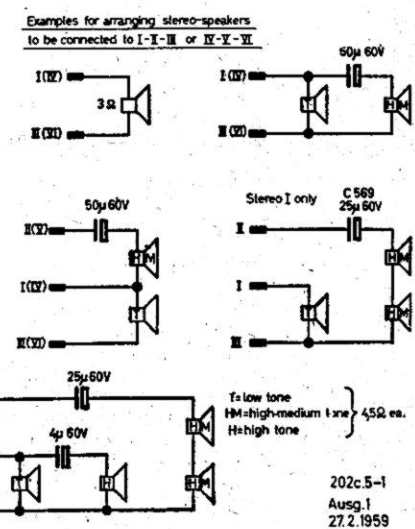
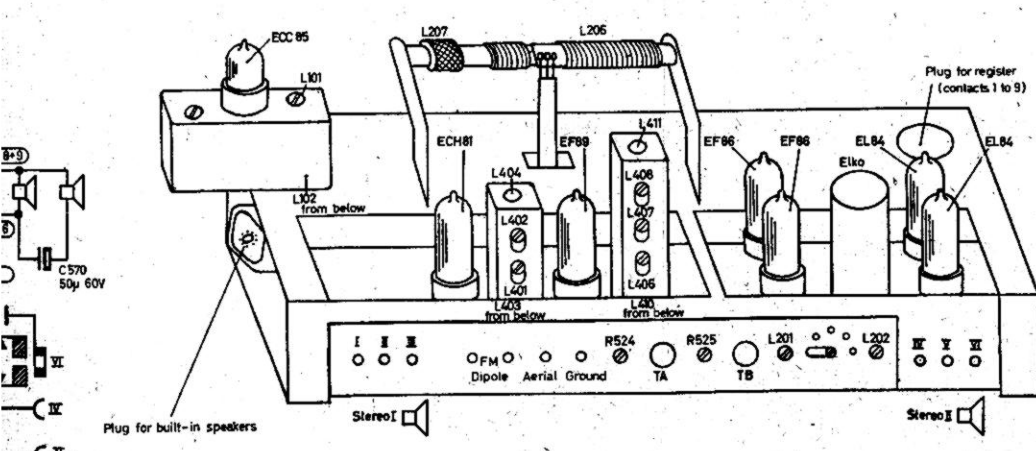
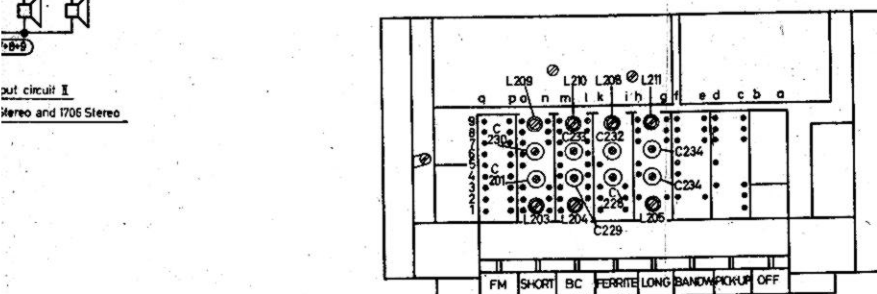
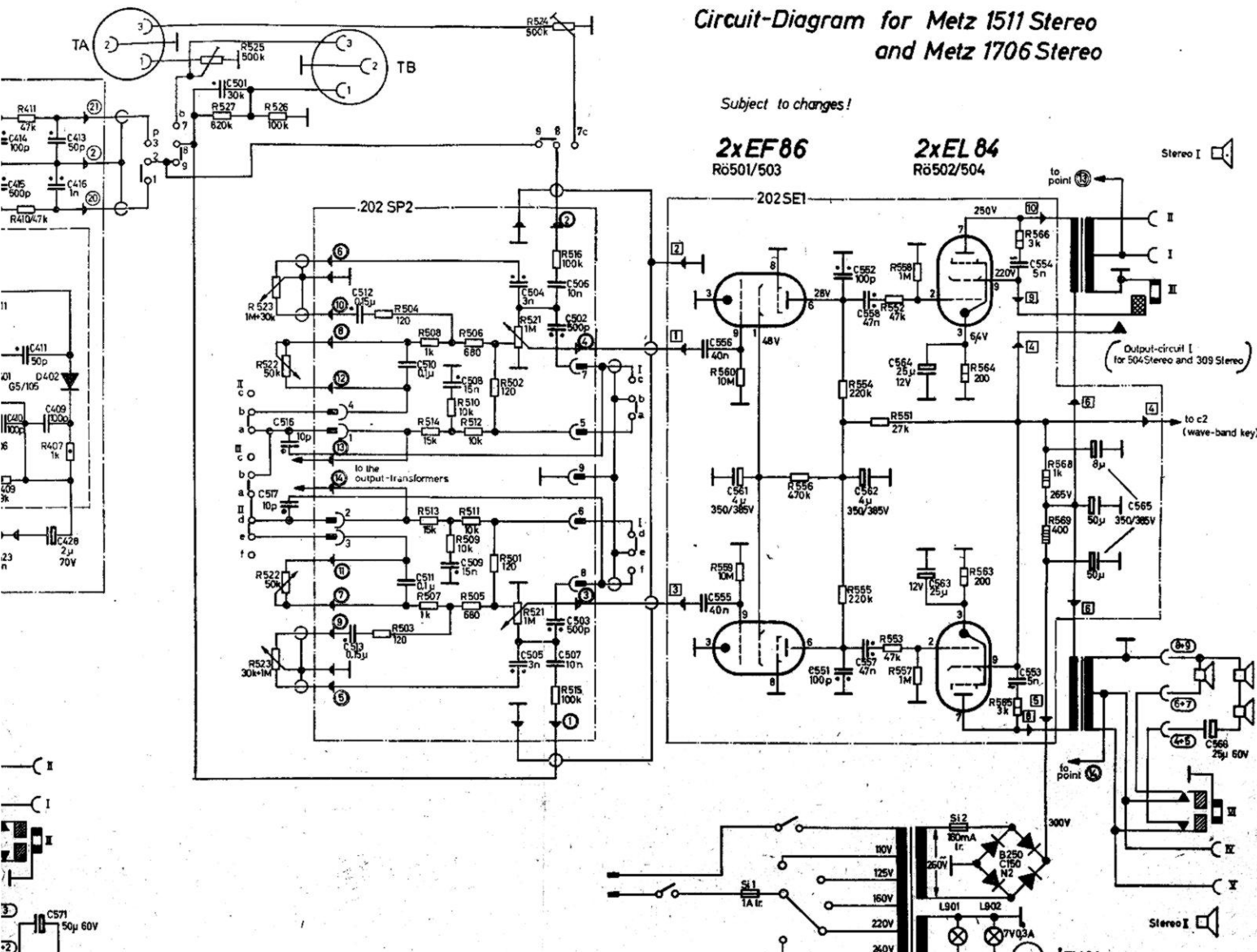
- ① Connections for 187U2
① Connections for 202SP2
① Connections for 202SE1
1 Socket-connections for 202SP2
(4-5) Socket-connections for built-in speakers
- Position of switches shown:
FM-key pushed.
Bandwidth-key pushed = wide
I Stereo - speakers
- Voltages measured in FM position
- Values in parenthesis for BC
Measured with tube-voltmeter $R_i = 10M\Omega$



Tube - socket
seen from below

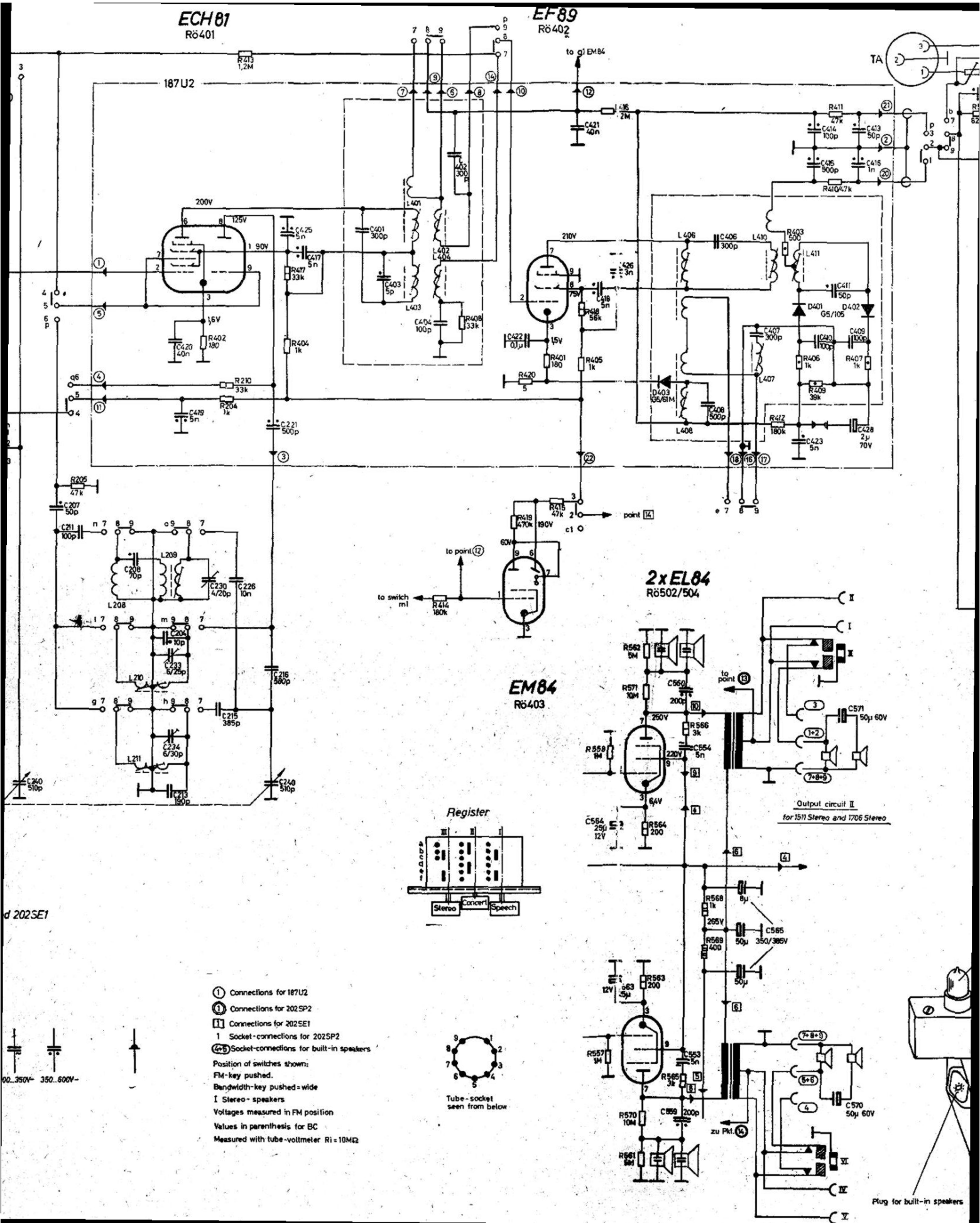
Circuit-Diagram for Metz 1511 Stereo and Metz 1706 Stereo

Subject to changes!



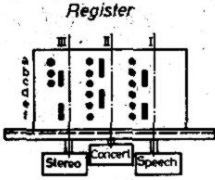
ECH81
R6401

EF89
R6402



d 202SE1

- ① Connections for 187U2
- ④ Connections for 202SP2
- ⑪ Connections for 202SE1
- 1 Socket-connections for 202SP2
- ④⑤ Socket-connections for built-in speakers
- Position of switches shown:
FM-key pushed.
Bandwidth-key pushed=wide
- I Stereo- speakers
- Voltages measured in FM position
- Values in parenthesis for BC
- Measured with tube-voltmeter $R_i = 10M\Omega$

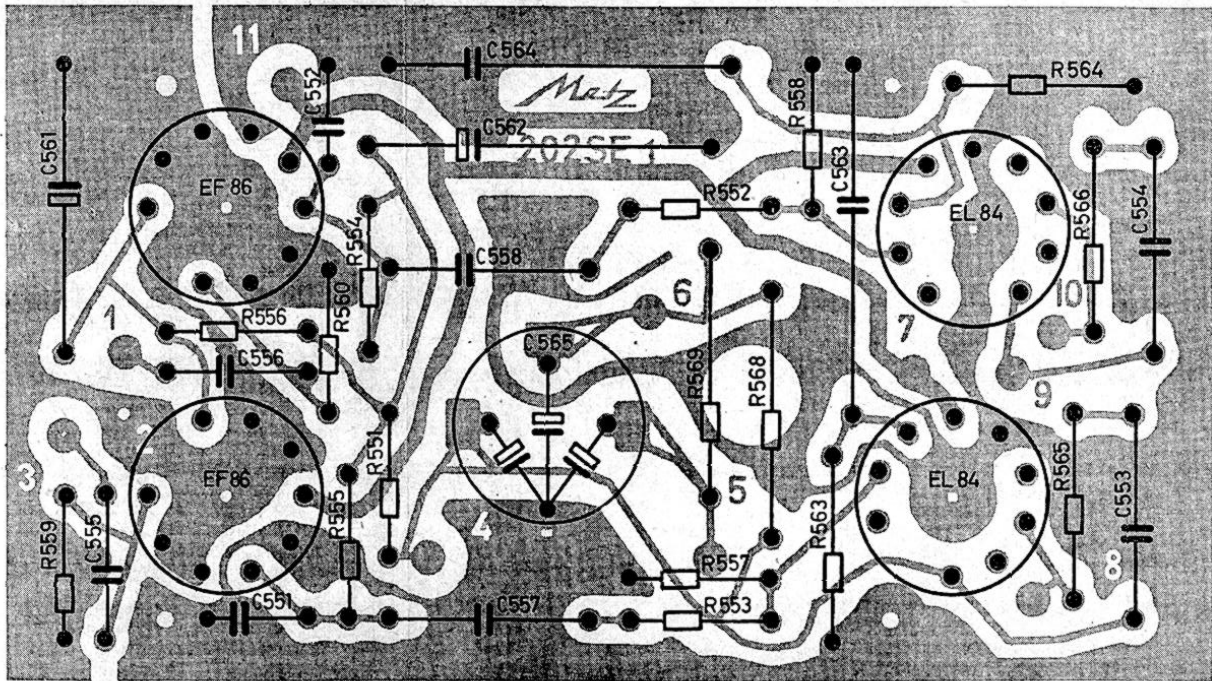


Tube-socket
seen from below

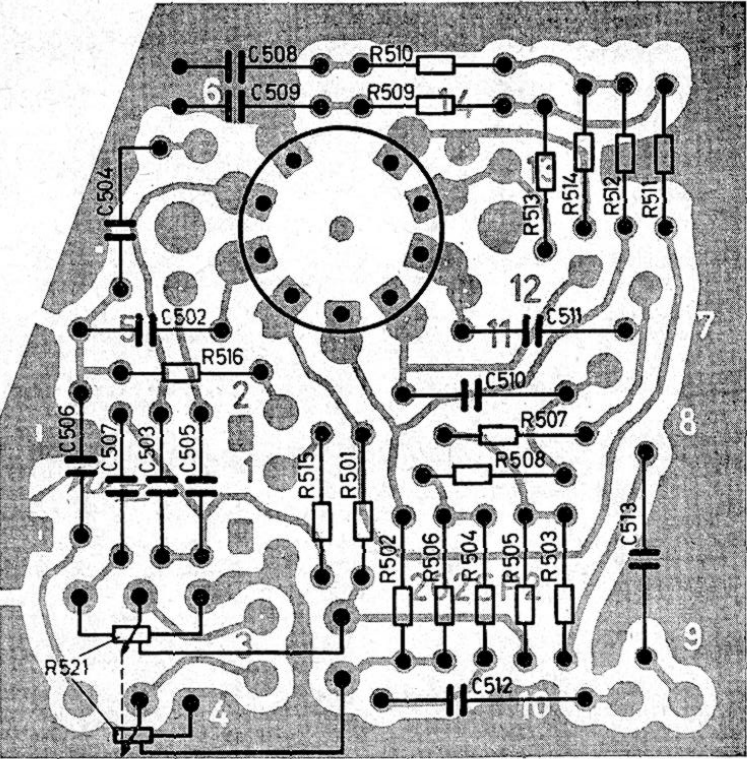
Output circuit II
for 1511 Stereo and 1706 Stereo

Plug for built-in speakers

AF printed circuit plate 202 SE 1



Printed circuit plate 202 Sp 2
(negative reaction)



The diagram shows a vacuum tube radio receiver circuit. The components are labeled as follows:

- Vacuum Tubes:**
 - ECH 81:** A 6X4 rectifier tube, shown in a circle with pins 1-6 and 7-9 labeled.
 - BF II:** A 6BE6 detector/AF amplifier tube, shown in a rectangle with pins 1-6 and 7-9 labeled.
 - EF 89:** A 6AV6 audio amplifier tube, shown in a circle with pins 1-6 and 7-9 labeled.
 - BF III:** A 6BE6 detector/AF amplifier tube, shown in a rectangle with pins 1-6 and 7-9 labeled.
- Power Supply:**
 - Dr. 2:** A transformer with a primary winding and a secondary winding.
 - R820, R821, R839:** Resistors in the power supply section.
 - C868, C865, C875, C867:** Capacitors in the power supply section.
- Detector and Amplifier Stages:**
 - R863, C862, R836:** Components in the detector stage.
 - R823, R810, R824, R837:** Resistors in the amplifier stages.
 - C861, C864, C860, C858, C857:** Capacitors in the amplifier stages.
- Output Stage:**
 - R830, C860, C858, C857:** Components in the output stage.

Volume Control



The volume can be adjusted with the double knob on the left. Do not change the volume before switching off. You will then not need to adjust it when switching on again, but simply press the correct button.

Switching off:


To switch off simply press button "OFF" (button 1).

Tuning for a station

Your METZ-radio-set is fitted with a special device, the single knob Duplex Tuning Control for the Long, Medium, Short and FM bands. You have thus tuning for AM as well as for FM broadcasts. Push button operation automatically switches the tuning over. The double knob on the right is used for selecting the station. The advantage of the Duplex Tuning is that by simply pressing a button, you can change from AM to FM without having to re-tune. As an aid for fine tuning, you have the tuning indicator. The station is correctly tuned when the tuning indicator is illuminated at its largest.

Your set is equipped with a built-in ferrite aerial for medium and long wave and with a broad-band dipole for FM (VHF). For short waves or in extremely bad receiving conditions connect to the socket marked  a roof aerial with a shielded down-lead as short as possible. For reception of more distant FM stations connect an external dipole to the socket marked .

Ground connection

It is not absolutely necessary to ground the set. At any rate you ought to try to improve the reception by connecting your set to a good ground (water pipe etc.). The ground terminal in the back plate is marked .

Sound Comfort Register

Together with the Treble and Bass Control, the Sound Comfort Register enables you to obtain even the finest shades of reproduction according to the type of broadcast, and to "mix" it corresponding to your personal taste and the acoustic of the room.

The three buttons of the Register are marked "Stereo", "Concert" and "Speech". According to the broadcast, press the corresponding button. The

buttons "Concert" and "Speech" cancel each other, that is to say, as one is actuated the original one returns to its position automatically. The "Stereo" button is to be used for Stereo Reception (see separate paragraph).

With the separate Treble and Bass Controls you can adjust the tone shades to your own liking. The Bass control is operated by the knurled wheel on the left of the Push-Button control, the Treble control by the knurled wheel on the right. Turning the Bass to the right reduces the Bass. Turning the trebles to the right accentuates them. The setting of the controls can be seen in the windows of the dial over the knurled wheels.

Depending on how you mix the Trebles and Bass, you can change the tone. The setting of the Bass depends entirely on the type of broadcast and your personal taste, and not on the Station. However, by turning the Treble Control to the left, you can trim and thereby reduce whistling and other noises from interfering stations. The best and most natural reproduction is always obtained with full Trebles, that is when the Treble Control is turned completely to the right. This is particularly important when receiving FM (VHF) Stations and playing Stereo-records whose tone quality only becomes pronounced when full Trebles and Bass are used.

Points of importance

Never remove the back or the base-plate of the instrument, unless you have first removed the plug from the mains socket.

Mains Fuse


The mains fuses 1 amp. slow-blow (marked S 1 ~) and 0,16 amp. slow-blow (marked S 2 =) are located on the base plate of the voltage selector. They are the same for all voltages.

Dial Lamps

Both dial lamps, 7 volt 0,3 amp. can, after removal of the back, be removed with their holder and exchanged.

Phono pick-up Connection

When you want to play records, connect the phono pick-up to the socket on the back of the instrument

marked . (This connection has been done in our works already). Press button "PHONO" (button 2) and set the volume and tone the same as for radio reception.

Stereophonic Sound

Your METZ console presents you with a new technical miracle - called "stereophonic sound". The sensation of music is now complete and your impression of 3-dimensional hearing is the same as though you were sitting in a concert hall.

For radio reception the operation of your METZ-stereophonic console is the same as with any ordinary set. In reproducing sound from stereophonic records or stereophonic tapes you have to observe some hints. In the stereo version the sound register has three push buttons, marked "Stereo", "Concert" and "Speech". Depending on the kind of programme you push the buttons marked "Concert" or "Speech".

Stereophonic reproduction

For reproduction of stereophonic sound push the first button marked "Stereo". That button should not be operated in radio reception or when playing monaural (ordinary) records. For switching over from stereophonic to monaural sound release the "Stereo" button by pressing it again.



Stereo button depressed

By depressing that button the two channels of the amplifier are separated from one another with one of them being connected to the right group of speakers and the second one to the left group of speakers. Both groups are being situated inside the console and are operated with an output energy of 7,5 watts each.

Stereo button not depressed

When the "Stereo" button is not depressed, the two channels of the amplifier are connected with one another. Both sets of speakers together are then operated with an output energy of 15 watts.

External set of stereophonic speakers

Should you consider it more effective to use an external group of loudspeakers, you have the chance to use one. The console is equipped with switchover jacks (marked  1 and  2) situated on the back plate of the set, which automatically switch over the