



PIN	FUNCTION	PIN	FUNCTION
1	Ground	5	Normally open relay contact
2	No connection	6	ALC feedback ALC threshold level approx. -6V
3	Normally closed relay contact	7	No connection
4	Ground	8	External speaker Load impedance 4 ~ 16Ω

■ **EXTERNAL VFO CONNECTOR (19)** on Figure 7)

This 9-pin connector provides a means of interconnecting the KENWOOD VFO-520S, another external VFO. The interconnecting cable is provided with the VFO-520S. The 9-pin jumpered VFO plug provided with the TS-520S must be inserted in this socket for normal transceiver operation.

PIN	FUNCTION	PIN	FUNCTION
1	VFO signal	6	Calibrator signal (9V DC)
2	VFO signal shield	7	No connection
3	Ground	8	9V DC to internal VFO (pin 9)
4	12.6V AC	9	9V DC to external VFO
5	Relay voltage (+ on transmit)		

■ **SG SWITCH (20)** on Figure 7)

The SG slide switch controls the screen grid voltage on the final tubes. For tuning or neutralizing the TS-520S you can set the switch to the OFF position. Turn the switch back to the ON position for normal operation. The SG voltage is on when the switch is up and off when the switch is down.

■ **GND (Ground) LUG (21)** on Figure 7)

To prevent accidental shocks from the chassis, as well as interference, connect a good earth ground to this lug.

■ **AC VOLTAGE SELECT SWITCH (22)** on Figure 7)

This slide switch switches the primary of the power transformer to select 120 or 220V AC operation.

■ **EXTERNAL RECEIVER ANTENNA JACK (23)** on Figure 7)

This is an antenna connector to which an external receiver, for example, a sub-receiver, is connected.

■ **RECEIVER ANTENNA SWITCH (24)** on Figure 7)

This switch connects the antenna to the TS-520S at the NORMAL position and to the external receiver at the REC ANT position.

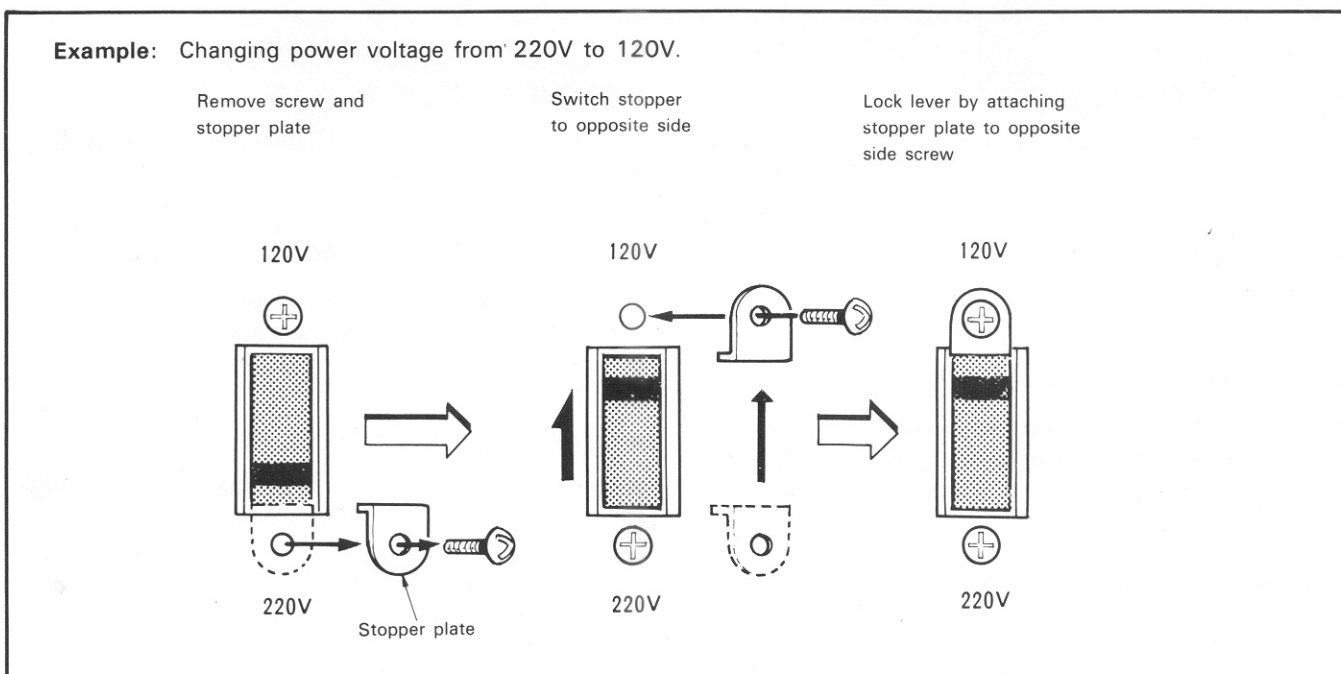


Fig. 8 Changing Power Voltage

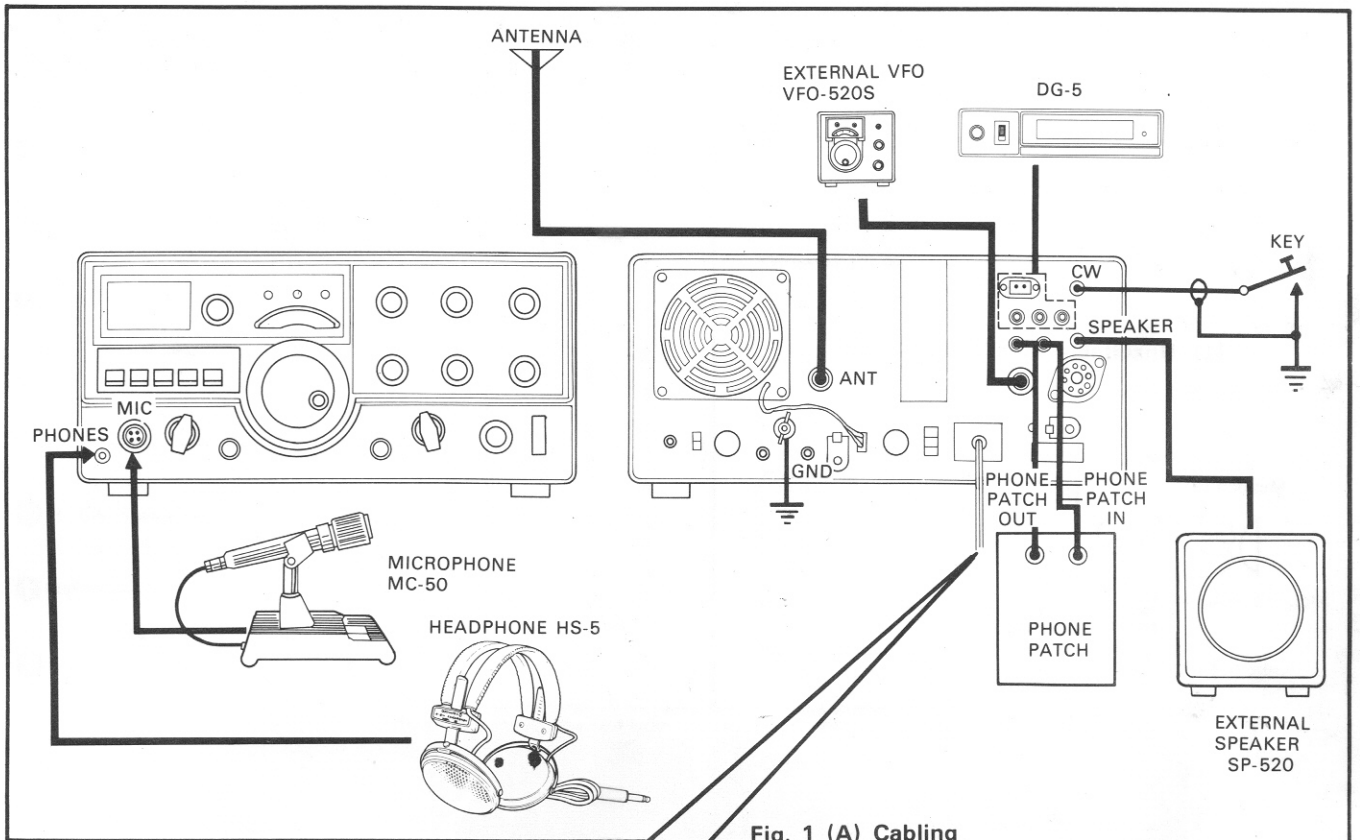
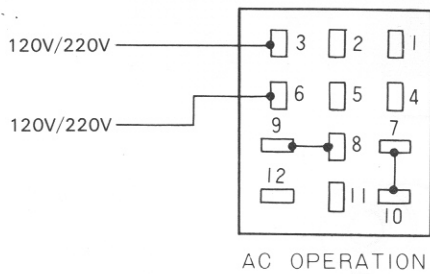


Fig. 1 (A) Cabling

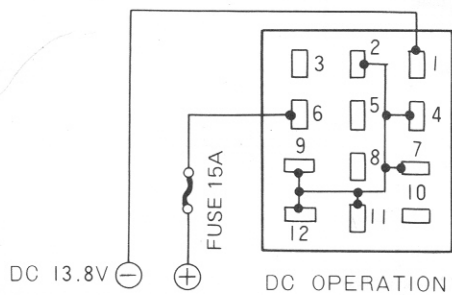
Fig. 1 (B) Power Plug Wiring

IMPORTANT-When wiring a new power plug, confirm that the pin numbering on the new plug is identical to the pin numbering on the POWER connector. The transceiver can be damaged by incorrect pin wiring.

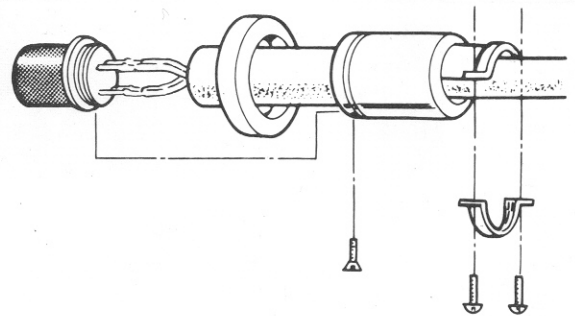


AC OPERATION

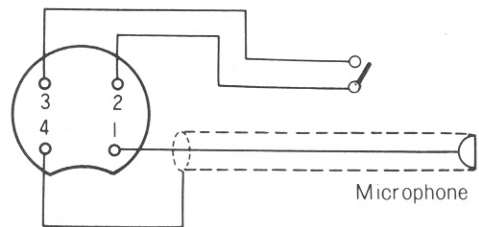
By use of optional DC-DC converter DS-1A.



DC OPERATION



seen from the cord.



Microphone

Fig. 2 Microphone Connector Wiring

PIN	FUNCTION	CONNECTION FOR AC OPERATION	CONNECTION FOR DC OPERATION
1	Ground	No connection	⊖ 13.8V DC
2	Power direct (Connect to pin 3 for remote AC power switching)	No connection	Jumper to 4, 7, 9, 11 and 12
3	AC power common	120/220V AC	No connection
4	+13.8V DC to control DC module	No connection	Jumper to 2, 7, 9, 11 and 12
5	No connection	No connection	No connection
6	Power switching	120/220V AC	⊕ 13.8V DC
7	12.6V AC (or 13.8V DC) to heaters	Jumper to 10	Jumper to 2, 4, 9, 11 and 12
8	13.8V DC to pin 9 in AC operation	Jumper to 9	No connection
9	13.8V DC to operate solid state circuits	Jumper to 8	Jumper to 2, 4, 7, 11 and 12
10	12.6V AC to pin 7 in AC operation	Jumper to 7	No connection
11	+13.8V DC to DC module	No connection	Jumper to 2, 4, 7, 9 and 12
12	+13.8V DC to DC module	No connection	Jumper to 2, 4, 7, 9 and 11

The power plug wiring is shown in Figure 1C.

■ **AC FUSE (8 on Figure 7)**

This fuse is a 3AG, 4 amp fuse which protects the power supply of the transmitter against short circuits. Never use a higher amperage fuse than the one specified. An improper one can cause extensive damage to the transmitter. When the fuse blows out, try to determine the cause before replacing it.

When the position of the AC Voltage Selector Switch is changed, it is also necessary to change the power fuse. For 120 volt operation a 6 ampere fuse, for 220 volt operation a 4 ampere fuse provided with the TS-520S should be used.

■ **DC FUSE (9 on Figure 7)**

This is a 2A fuse holder, placed in the 13.8V DC power source.

■ **KEY JACK (10 on Figure 7)**

Connect a key to this 1/4" phone jack for CW operation.

■ **SPEAKER JACK (11 on Figure 7)**

The receiver audio output can be connected through this jack to the SP-520 or another external 4 to 16 ohm speaker. The internal speaker is disconnected when an external speaker is connected.

■ **13.8V DC CONNECTOR (12 on Figure 7)**

This connector is provided specifically for the DG-5 Digital Display to supply 13.8V DC power. It is capable of delivering around 1A.

CAUTION:

The connector output power contains a large amount of ripples. Do not use it for units other than the DG-5 unless absolutely necessary.

■ **VFO OUT JACK (13 on Figure 7)**
 ■ **HET OUT JACK (14 on Figure 7)**
 ■ **CAR OUT JACK (15 on Figure 7)**

These jacks feed the respective local oscillator outputs to the DG-5 Digital Display.

■ **PHONE PATCH IN JACK (16 on Figure 7)**

This is a phone patch input terminal for transmission of SSTV or other line inputs.

■ **PHONE PATCH OUT JACK (17 on Figure 7)**

This is line output terminal for phone patch on recording. It is also used for connection to the input of FSK demodulator or SSTV.

■ **REMOTE CONNECTOR (18 on Figure 7)**

The REMOTE connector is an 8-pin socket for use in interconnecting a linear amplifier, an external speaker, or another accessory item. (See Figure 30)

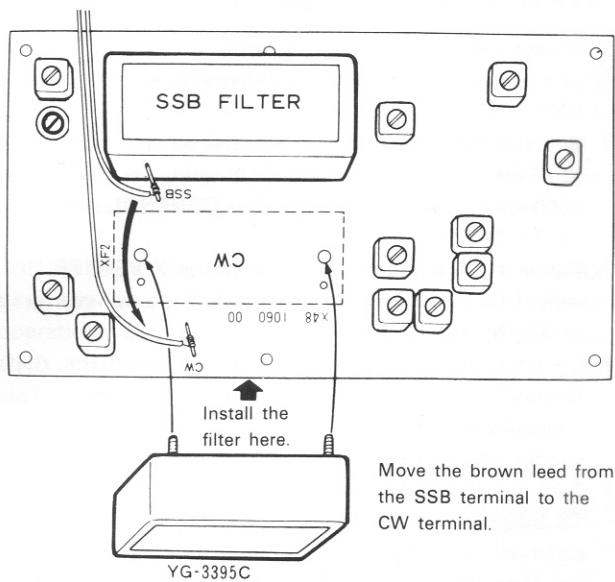


Fig. 30 Installing the Accessory CW Filter

Reconnect the VR mounting hardware and replace the covers. If the speaker lead was disconnected, be sure to reattach that also.

■ INSTALLING THE DC-DC CONVERTER (DS-1A)

1. Remove the patch plate located on the rear panel of TS-520S.
2. Secure the DC-DC unit to the rear panel using the four tapping screws supplied with the unit.
3. Select the correct color coded lead from the DC-DC unit making sure that the color code corresponds to that of the lead connected to the DC-DC terminal board adjacent to the power transformer. Solder the lead onto the terminal board.

■ REMOTE CONNECTIONS

Figure 32 shows the REMOTE connector. This 8-pin plug can be used for attaching linear amplifiers, or other external accessories to the transceiver.

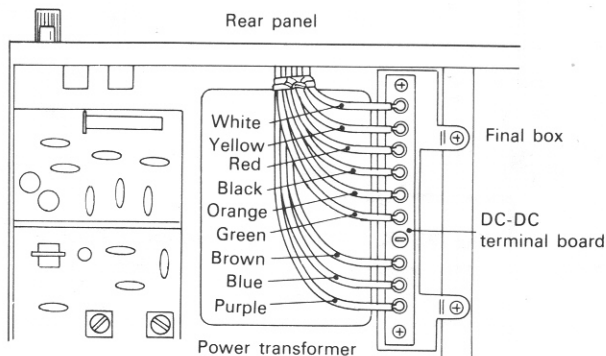
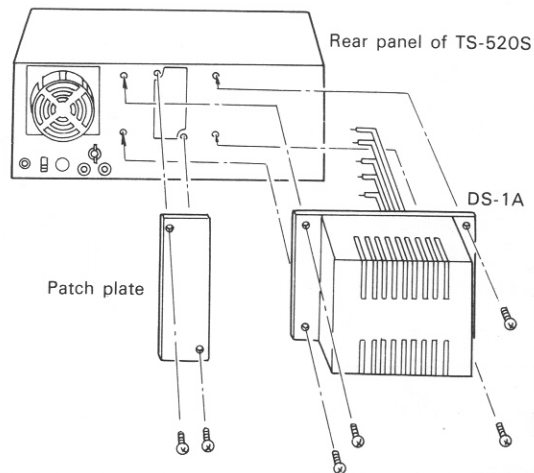


Fig. 31 Installing the Accessory DC-DC Converter

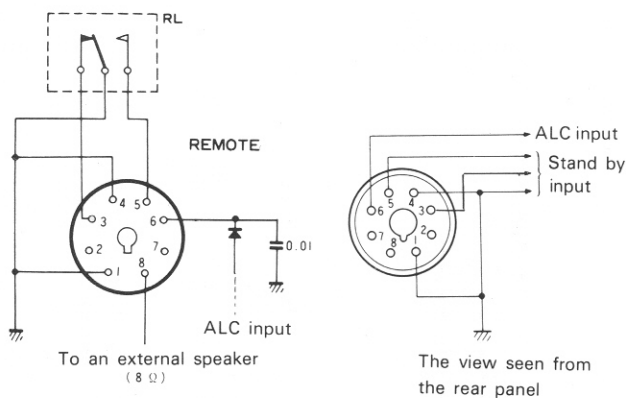
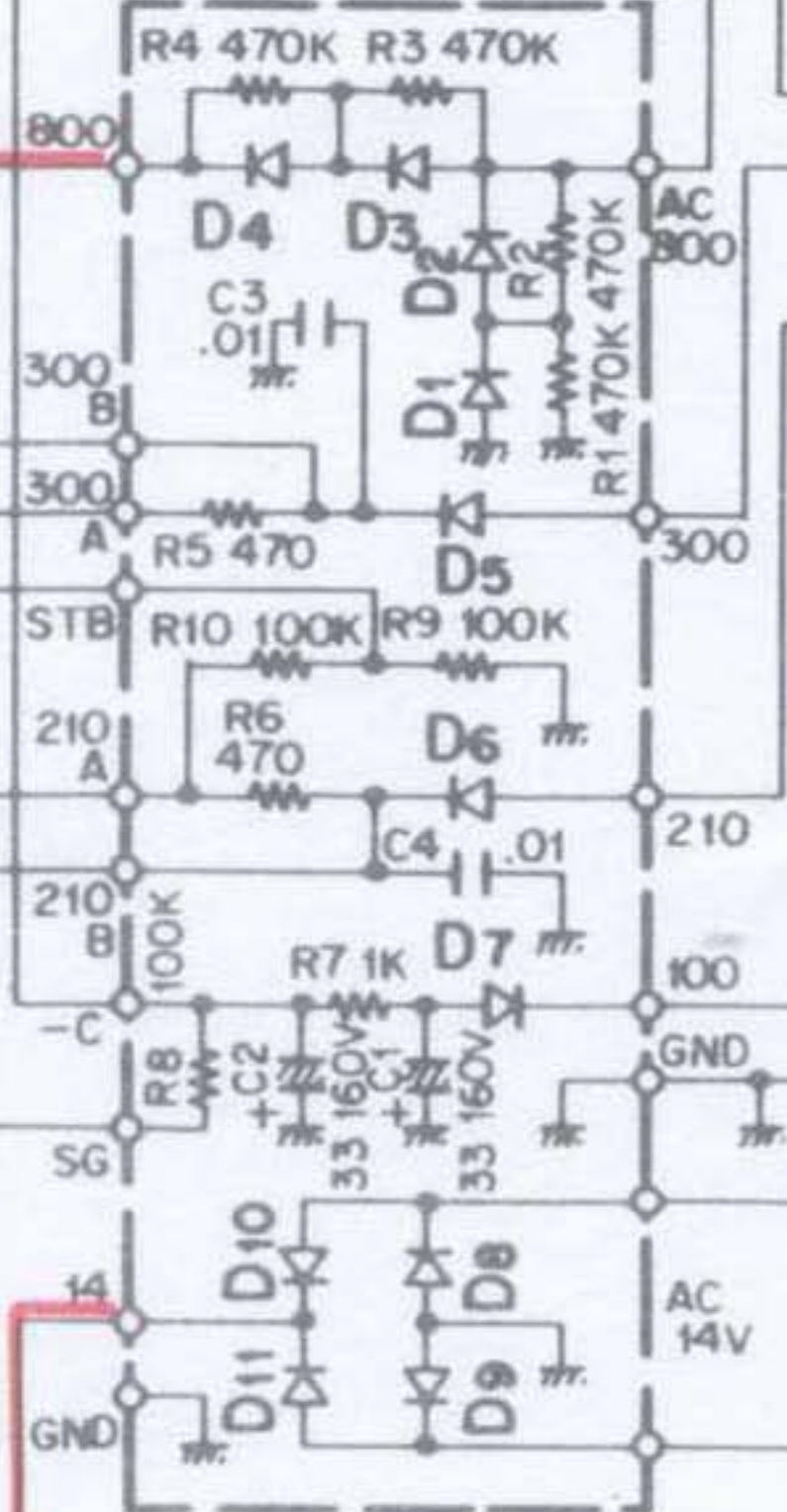
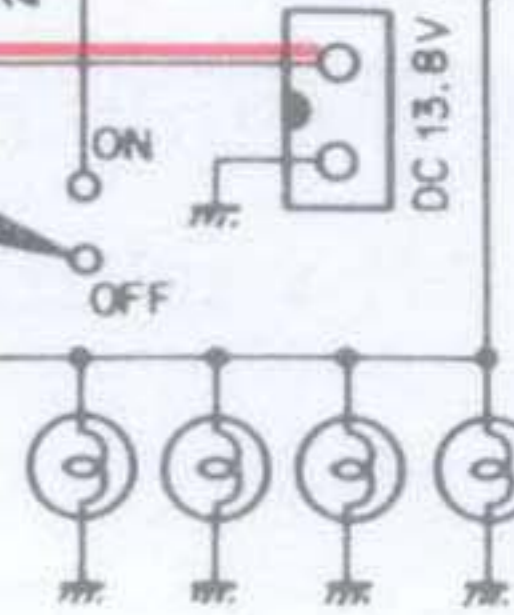
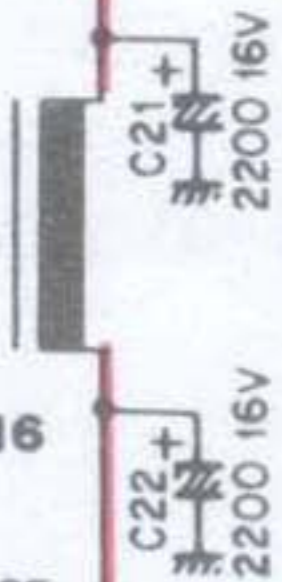
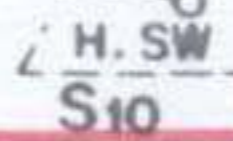
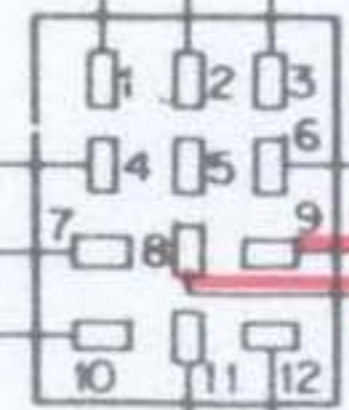
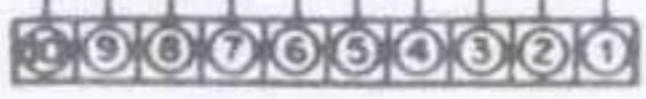
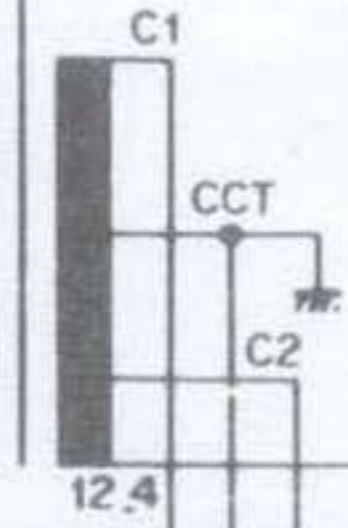
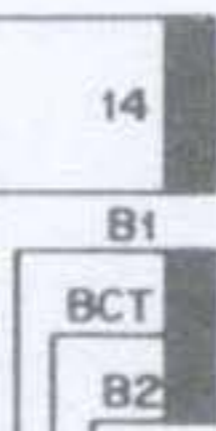
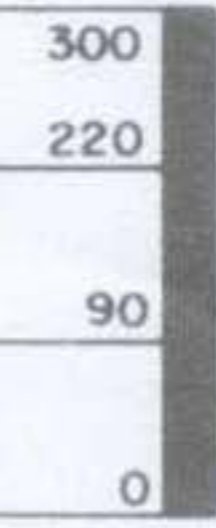
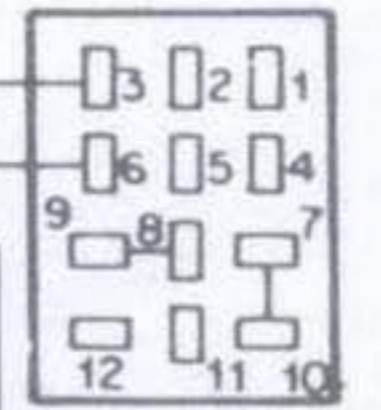
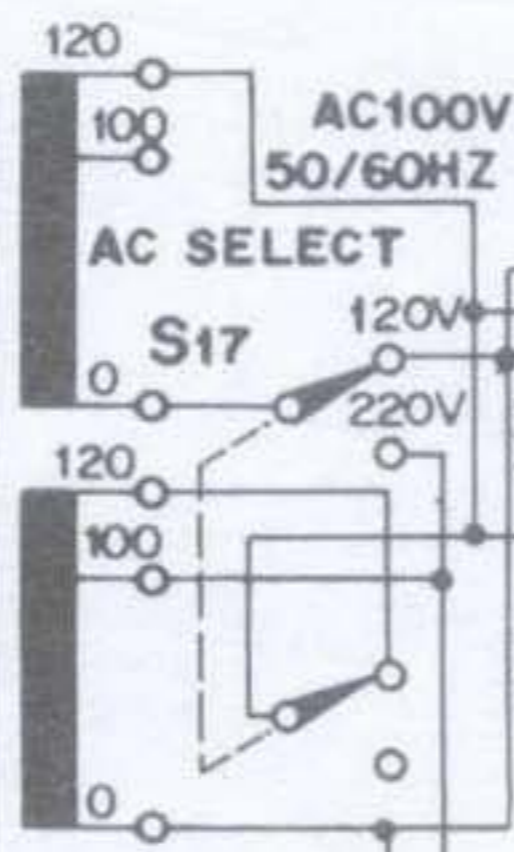
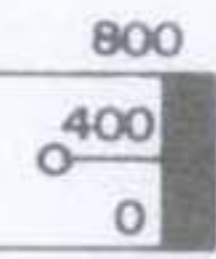


Fig. 32 REMOTE Connector

RECTIFIER UNIT (X43-1090-02)



D1~6 : V08J
D7 : V06E
D8~11 : V03C



EXT