

**INSTRUCTION
MANUAL
SP-901P**

YAESU MUSEN CO., LTD.

TOKYO JAPAN

PHONE PATCH/SPEAKER SP-901P



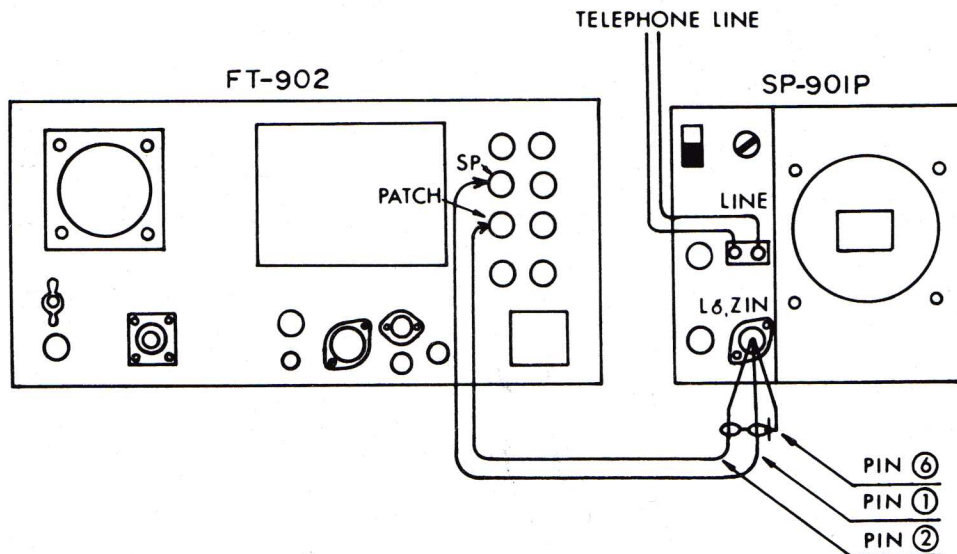
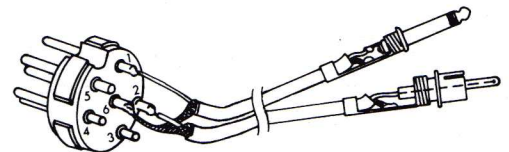
GENERAL

The YAESU Landliner Phone Patch/Speaker, model SP-901P, is designed to be used with the FT-902 series of all mode HF transceivers, providing hybrid phone patch operation as well as an external speaker unit.

All the operating controls are conveniently located on the front panel of the compact housing, which matches the FT-902 series in styling. Jacks are provided on the rear panel for making the necessary external connections.

INSTALLATION

Installation of this unit consists of connecting the telephone line to the jack marked LINE, and making the other interconnections shown in the drawings.



OPERATION

A. Front Panel Controls



Front Panel

(1) PATCH Switch

In the "ON" position, the hybrid circuit is connected to the phone lines and transceiver is ready for phone patch operation. The built-in speaker is disconnected. When this switch is placed in the "OFF" position, the phone patch is disconnected from the phone lines, and the built-in speaker is connected to the transceiver.

(2) RX GAIN Control

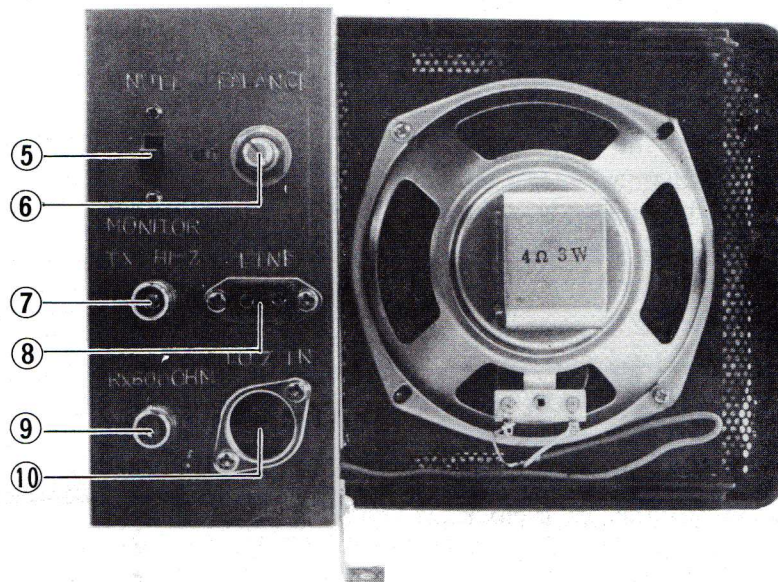
This potentiometer controls the amplitude of the received signal fed to the phone lines.

(3) TX GAIN Control

This potentiometer controls the amplitude of the phone signal fed to the microphone input of the transceiver.

(4) METER

The meter indicates the signal level fed to the phone lines from the transceiver while on receive. The meter also is used to measure the balance for the hybrid circuit, in conjunction with the MONITOR/NULI switch and the BALANCE control on the rear panel.



Chassis Rear Apron

(5) MONITOR/NULL switch

This switch is placed in the NULL position while adjusting the balance of the hybrid circuit.

It must be in the MONITOR position for phone patch operation. In this position, the meter will indicate the signal level fed to the phone lines from the transceiver.

(6) BALANCE control

This control is used to null the receiver audio output, thus providing isolation between the receiver audio and the microphone input.

(7) TRANSMITTER HI-Z

This jack is used to connect the patch output to the microphone input when using a transceiver of high microphone input impedance.

(8) LINE jack

This jack is used for connection to the telephone lines.

(9) RECEIVER 600 Ohm jack

This jack is used with receivers of 600 ohm audio output impedance.

(10) LOW-Z IN jack

Through the LOW-Z IN jack, connections for the speaker output and the microphone input of the FT-901 transceiver are accomplished.

B. Manual Phone Patch Operation

Place the PATCH switch in the PATCH position.

Using the local telephone, contact the land-line user of the phone patch, and have him or her stand by.

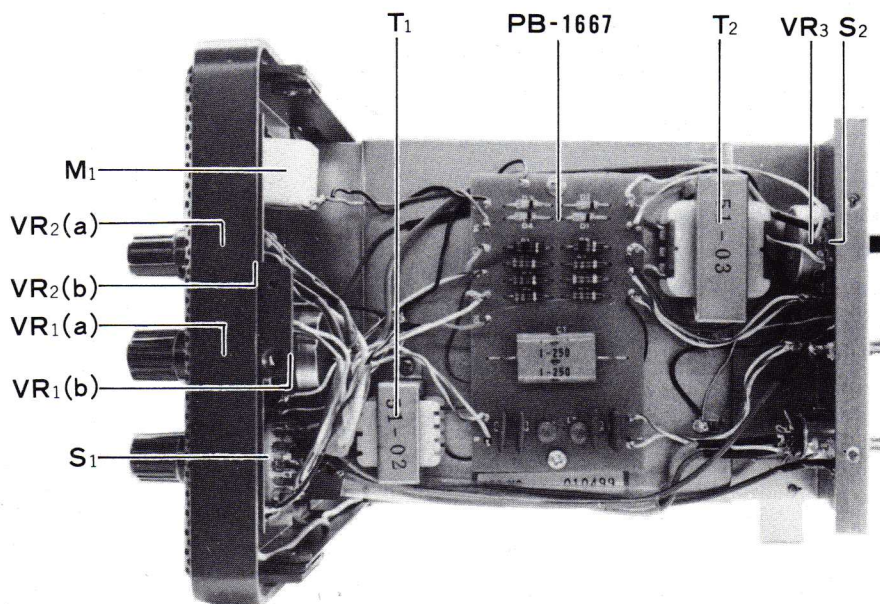
While receiving a signal, set the transceiver volume control to the 12 o'clock position, and adjust the RX GAIN control for a comfortable level as heard through the telephone.

Place the MONITOR/NUL switch in the NULL position, and adjust the BALANCE control for a minimum signal level as indicated on the meter. The RX GAIN control should be set to approximately 3/4 clockwise rotation for this adjustment.

Return the switch to the MONITOR position.

Have the user at the remote telephone speak in a normal voice. Adjust the TX GAIN control so that the telephone line signal will modulate the transceiver correctly when its MIC GAIN control is set to the 12 o'clock position.

During manual phone patch operation, it is necessary for the station operator to monitor the conversation, and switch the transceiver manually from transmit to receive via the PTT or MOX mode. Monitoring of the conversation can be made through the telephone in the operating room.

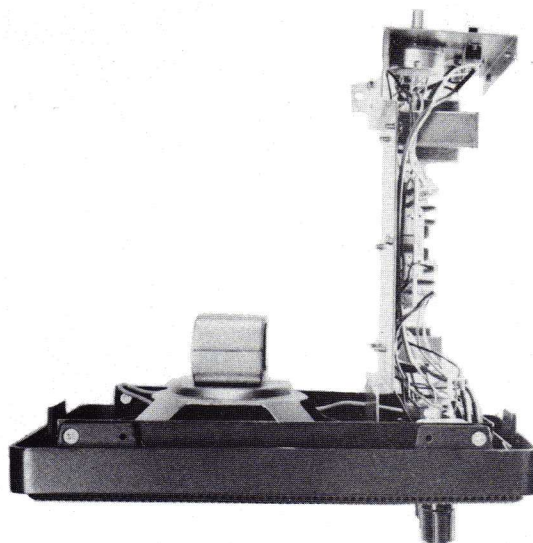


Right Side View

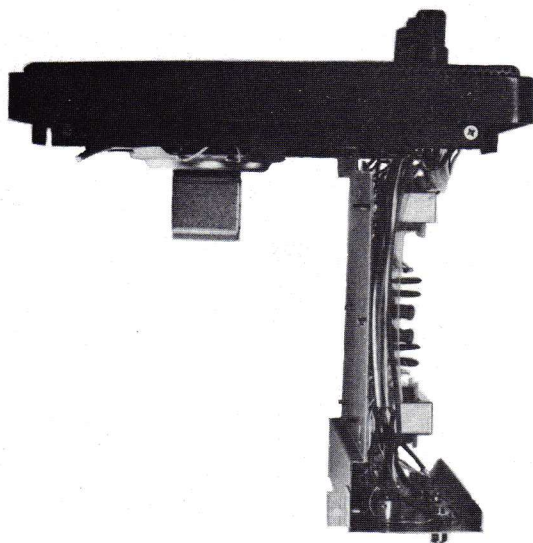
C. Voice Controlled Operation (VOX)

If the telephone line signal is good, VOX operation can be performed. Proper operation of the VOX will depend on obtaining a good null of the receiver signal as described on the previous page. The depth of this null depends, in turn, on the quality of the telephone lines, and is best when the line impedance is 600 ohms.

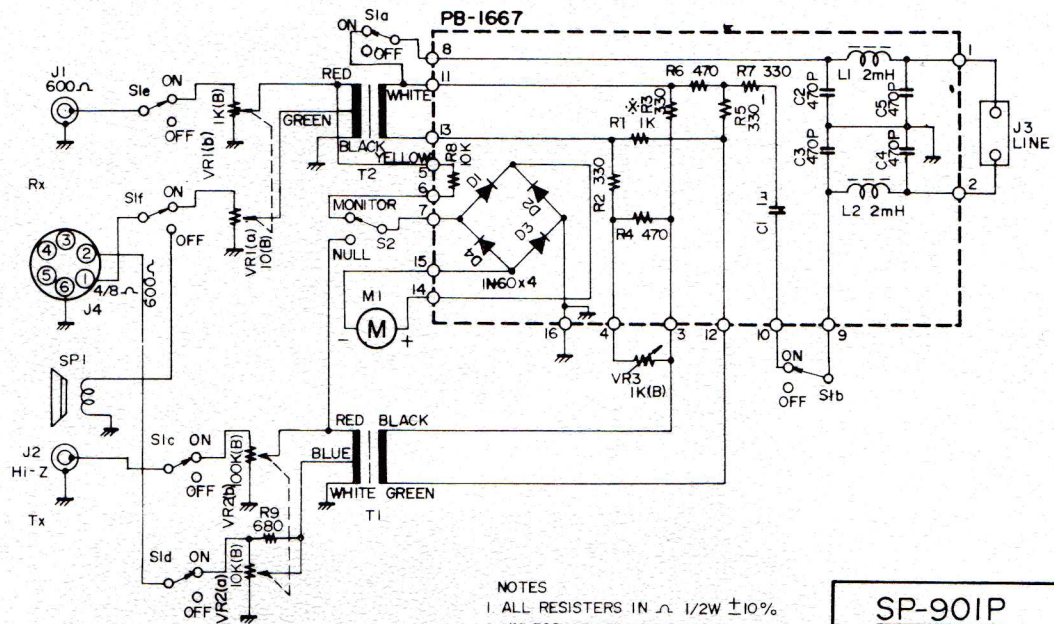
If a good null is obtained, the telephone user should speak in a normal voice. Advance the FT-902 VOX GAIN control until the user's voice activates the transceiver VOX relay. The transceiver should revert to the receive condition when the user stops speaking, and the FT-902 relay hold time control VR₆₀₂ should be adjusted for smooth operation.



Top View



Bottom View



- NOTES
1. ALL RESISTERS IN $\approx 1/2W \pm 10\%$ UNLESS OTHERWISE NOTED.
 2. ALL CAPACITORS IN F
 3. * VALUE IS NOMINAL.

SP-90IP
CIRCUIT DIAGRAM

PARTS LIST

Symbol Number	Parts Number	Description			
			T1	L2030014	TRANSFORMER SA2-10936
PB-1667	F0001667	P.C. Board	T2	L2030015	SA2-10937
	C0016670	P.C. Board with Components			
					METER
		DIODE	M1	M0290001	KTC-012 (VU)
D1~4	G2090029	Ge 1N60			
		RESISTOR	SP1	M4090020	SPEAKER SE-120A 4Ω 5W
R2, 3, 5, 7	J10276331	Carbon Composition 1/2W GK 330Ω			
R4, 6	J10276471	Carbon Composition 1/2W GK 470Ω			SWITCH
R1	J10276102	Carbon Composition 1/2W GK 1kΩ	S1	N0190049	MSB-6-2
R8	J10276103	Carbon Composition 1/2W GK 10kΩ	S2	N6090004	SSF-22-08B
R9	J01245681	Carbon Film 1/4W TJ 680Ω			
		POTENTIOMETER	J1, 2	P1090025	RECEPTACLE STR-01
VR1	J68800002	RA25YQ20SB 10ΩB/1kΩB	J3	P1090014	SI-7501
VR2	J61800010	CTM70A 10kΩB/100kΩB	J4	P1090033	D6-701B-00
VR3	J67800001	EVC-BOAS-15B13 1kΩB			
		CAPACITOR			ACCESSORIES Plug
C2~5	K30176471	Dipped Mica 50WV 470pF		P0090018	STP-58
C1	K52240001	Metallized Polyester Film 250WV 1μF		P0090005	SI-7502
				P0090032	E6-701B-02
		INDUCTOR			
L1, 2	L1190034	FL7H222J 2.2mH			

