

# VOX-3

SCHEMATHEEK  
Beh. T. Hultermans  
Postbus 4228  
5604 EE Eindhoven

## OPERATING MANUAL

We are happy you have purchased our new Model VOX-3. Your unit has been carefully engineered and manufactured under KENWOOD'S rigid quality standards and should give you satisfactory and dependable operation for many years.

Please inspect your Model VOX-3 for any sign of damage sustained in transit. If damage is evident, immediately notify your dealer.

### FEATURES

- \* Exclusively designed for use with your Transceiver TS-700 Series. Compact in styling, yet provides superb performance.
- \* The employment of all-solid-state circuitry (1 FET, 8 transistors, 9 diodes) and VOX unit usually found in our reputable transceivers (T-599, TS-511, TS-515, TS-520, etc.), assure exceptionally high stability and sensitivity.
- \* VOX operation is readily available by simply connecting the supplied cable. No external power or battery is required.
- \* The adoption of auxiliary circuits, such as ANTI VOX circuit and DELAY TIME circuit, provides trouble-free operation for many hours.
- \* Normal QSO with standby switch or microphone's PTT (press-to-talk) switch is also possible at any time regardless of the position of VOX control.

### OPERATING PARTS

#### VOX GAIN Control

This control adjusts VOX sensitivity. Turning it clockwise will increase VOX sensitivity; turning fully counterclockwise (OFF position) will shut off VOX circuit.

#### ANTI VOX Control

This control adjusts ANTI VOX sensitivity. Turning it clockwise will increase ANTI VOX sensitivity.

#### DELAY TIME Control

This control adjusts the holding time of VOX relays. The minimum holding time is obtained at "S" position, and the maximum at the "L" position.

#### VOX Connecting Socket.

This socket is used for connection between TS-700 and VOX-3 with the supplied connecting cable.

### BEFORE OPERATING

#### 1. Accessory

After unpacking the unit, check that the following items are included with the unit:

- Connecting cable . . . . . 1
- Instruction manual . . . . . 1

#### 2. Connection

Connect the unit to your TS-700 using the supplied connecting cable.

When VOX-3 is not in use and you wish to disconnect the cable, be sure to insert the shorting plug (supplied with TS-700) into the 9-pin socket provided on TS-700.

#### 3. Installation

Place the unit on TS-700 or conveniently on your operation desk. The connecting cable can be extended up to 60 cm.

### OPERATION

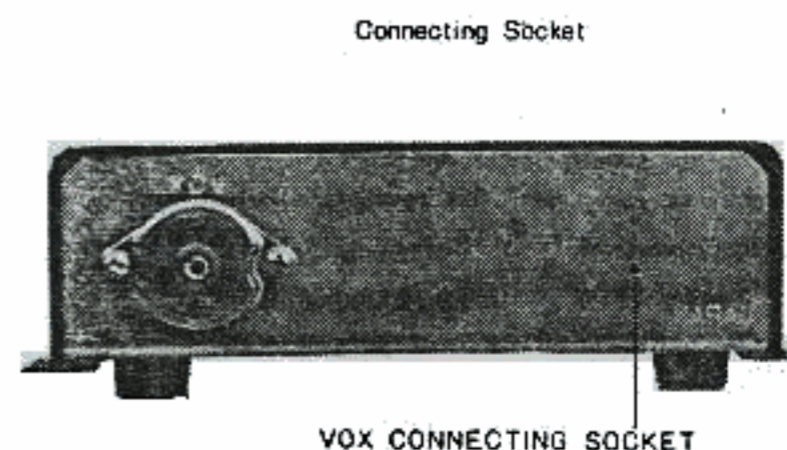
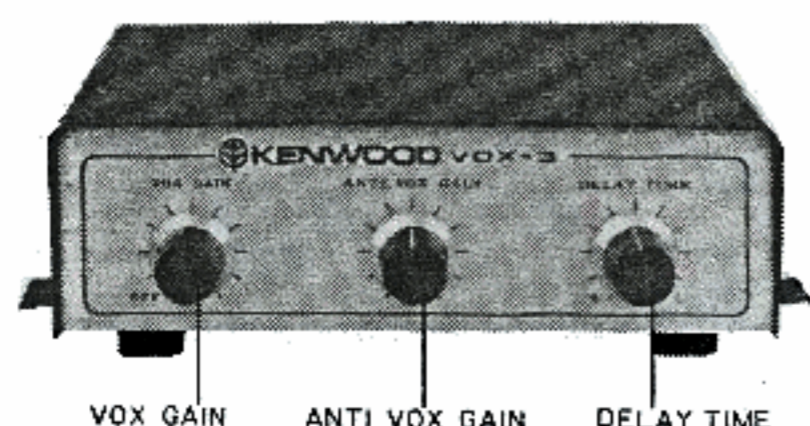
#### 1. VOX GAIN Adjustment

Set VOX GAIN Control to ON and speak into the microphone. Adjust the control so that VOX relays start operating at suitable loudness of voice. Do not increase VOX sensitivity excessively, as it will result in erroneous operation of the relays.

#### 2. ANTI VOX GAIN Adjustment

Speak into the microphone while holding it about 20–30 cm from mouth. Then, stop speaking and set ANTI VOX Control to the position where VOX relays just stop their beating action (beating noise will be heard from TS-700). This control should be set to the lowest possible position — it may be normally set around the 9 o'clock position.

If a uni-directional microphone is used, adjust-





ment of ANTI VOX Control may be unnecessary.

### 3. DELAY TIME Adjustment

Adjust and set DELAY TIME Control to appropriate position. If DELAY TIME is too short, VOX relays will be reset between words, resulting in difficulty in transmission. If it is too long, the relays will not reset at the end of transmission, preventing smooth QSO operation.

Normally, this control may be set around the 10 o'clock position.

### 4. Caution

Installation of VOX-3 requires no particular method. However, care should be used not to give undue force to the connecting cable or its plug, as it may result in poor contact of the plug or the cord being disconnected.

## CIRCUIT DESCRIPTION

### 1. Signal Amplifier

The microphone input signal is amplified through the preamplifier (2SK30A) and is further amplified by Q3. The amplifier is rated at less than 1mV(1kHz) of input sensitivity, permitting any of common type microphones to be directly connected for required input voltage. The amplifier is also designed to emphasize high frequencies to improve the rising characteristic of consonants involved in voice.

### 2. Waveform Shaping Circuit

The output of the signal amplifier is rectified by D6 and is then given delay characteristic by Q4 and Q5. Finally, the input waveform is shaped by the Schmidt circuit (Q6, Q7).

### 3. ANTI VOX Circuit

This circuit prevents VOX circuit from being

activated by the speaker output entering the microphone. In the circuit, the receiving signal passing through the speaker lines is full-wave rectified and is then DC amplified by Q1. The output of Q1 drives the switching transistor Q2 and, hence, the output of Q4 is shorted to prevent the microphone input signal from entering the wave-form shaping circuit.

## MAINTENANCE

### 1. Removal of Case

Remove 4 screws holding the case at the left and right sides. Then, gently lift the case upward.

### 2. Troubleshooting

When the unit fails to work, it may be an indication that the connecting cable is loose or disconnected. Correct the connection or check the cord for any sign of breaking.

## SPECIFICATIONS

VOX Operating Level:	10mV or less (at 1kHz)
ANTI VOX Operating Level:	100mV or less (at 1kHz)
Microphone Input Impedance:	50k $\Omega$
Power Requirement:	DC 13.8V
Semiconductors:	FET . . . . . 1 Transistor . . . . . 8 Diode . . . . . 9
Dimensions:	132.5(W) x 39(H) x 117(D) mm
Weight:	Less than 1kg



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# SCHEMATIC DIAGRAM

