SOMMERKAMP

CITIZENS BAND
TRANSCEIVER

MODEL
TS-5612

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INSTRUCTION MANUAL
GENERAL:

Your SOMMERKAMP TS-5612 transceiver has been designed for continuous heavy duty portable application. The transceiver is designed to operate with internal dry cells or rechargeable nickel-cadmium batteries such as N500AA set with the 12360 charger.

To prevent excessive battery drain, this transceiver has a stand-by switch in combination with the operate and call switch. which by a timing circuit and a switching transistor switches the receiver on for 2 seconds and off for 10 seconds. This device extends the battery life 6 times longer compared with continuous squelched stand-by operation. It is necessary, however, for a calling station to call by minimum 10-15 seconds before reception and contact is possible.

RECEIVER SECTION:

The receiver section is designed to receive amplitude modulated (AM/A3) signals in the 26.95 to 27.275 MHz (11 meter) citizens band. The unique combination of low noise Field Effect Transistors (FET), single conversion, a combination of mechanical ceramic and L/C filters, fully automatic noise limiter and a hi-fi quality speaker amplifier will give you exceptional reception quality in this fine piece of equipment.

In addition, the above combination of the latest technology provides you with a sensitivity and unwanted signal rejection and noise suppression available previously only in space and military communication equipment.

The power supply of the receiver section is stabilized by an extreme sharp cut-off Zener diode controlled series stabilizer to obtain the high sensitivity and unwanted signal rejection. The fully automatic series gate noise limiter, which virtually cuts off the audio output during ignition noise pulses, is defeatable to make even the weakest signal audible which otherwise would be cut off by the threshold level of the ANL switching diode.

The high squelch sensitivity is achieved by using a separate squelch detector and switching circuit with a carefully balanced hysteresis. The transformerless hi-fi quality audio power amplifier will drive any load between 32 ohms and indefinite such as internal speaker/microphone combination or external speaker/microphone or headset combinations having the above impedances.

The meter indicates the field strength during reception of a signal and without signal the battery condition.
TRANSMITTER & MODULATOR SECTION:
The transmitter section is designed for continuous heavy duty transmission of amplitude modulated (AM/A3) signals on any of the 6 channels in the 26.965 to 27.275 MHz range (11 meter) citizens band.

The modulator consists of an active audio filter type speech processor, integrated pre-and power amplifier and modulation transformer. This gives you the lowest possible modulation distortion and up to 100% modulation. The input is designed for the 32 ohm speaker/microphone combination.

RECEIVE/TRANSMIT SWITCHING:
The receive/transmit switching is done by a single pole, single throw microswitch with a life time of about 5 million operations and a combination of NPN and PNP switching transistors which also function in the receive mode as series voltage stabilizers. For remote switching, a parallel contact is provided at the accessory jack.

METER:
The combination meter provides you with the following functions:
During receive mode—it indicates the incoming signal strength, and without incoming signals the battery condition.
During transmit mode—it indicates the output power.

STAND-BY:
The stand-by feature is incorporated to reduce battery drain during monitoring of a channel if no continuous communication is necessary.

POWER SUPPLY:
This transceiver is designed to operate with a nominal 12V DC power supply such as the internal dry cells or nickel-cadmium rechargeable batteries.

UNPACKING AND CHECKOUT
Unpack the carton carefully and check for exterior damages.

Check that the volume control is in the OFF position. The squelch control in the ANL-OFF position and the standby-operate-call switch in OPERATE position.

Press the dent of the battery compartment lid and pull it out toward the bottom.

Lift out the battery holder and insert 8 dry cells into the holder as indicated.
+ to +, - to - pole. Leave the 2 dummy batteries in the holder as they are. If you use rechargeable batteries, insert 10 pieces of them in the same manner as above but remove the dummy batteries.

Snap the battery holder onto the snap connector provided and reinsert the holder into the compartment.
Replace the compartment lid by inserting it straight from the bottom up until it snaps in rightly.

Then switch the transceiver ON by rotating the volume control clockwise and check that the meter needle moves into the red field. If the meter needle does not move, switch OFF immediately and check if the standby-operate-call switch is in the OPERATE position. If this is the case, open the battery compartment to remove the battery holder to ensure that the batteries are correctly inserted.

Now turn the volume control until noise is heard from the speaker. Then extend the rod antenna to the full length.
Switch the standby-operate-call switch to STANDBY. The noise from the speaker shall cease and the meter needle shall move to the black field. Within 10-15 seconds, the noise from the speaker shall be heard again and the meter needle moves to the red field. Wait for this cycle to repeat itself several times, then switch to OPERATE.

Rotate the channel switch step by step from channel 4 to 15 and check that some noise and/or signal is heard on each channel.

Push the push-to-talk (PTT) switch and observe the meter needle. It shall move into the red field. Now whistle into the speaker/microphone. The needle shall move a little. The same applies while pressing and releasing the call switch between operate and call.

Repeat this check on each channel. This completes the checkout.

OPERATION

Extend the rod antenna completely and switch the transceiver ON by rotating the volume control clockwise.

Rotate the channel switch to the desired channel.

Adjust the volume control to a comfortable level.

Press the PTT switch and talk with a normal voice into the speaker/microphone from a distance of 5-10 cm. After completing your transmission, release the PTT switch, and the transceiver is ready for reception. Always remember that your opposite party cannot hear you while he is transmitting.

Adjust the squelch control so that the background noise just disappears during non-transmitting periods of your opposite party.

For stand-by operation, switch the STANDBY-OPERATE-CALL switch to STANDBY. Remember that the transceiver is 10 seconds OFF and 2 seconds ON and that your opposite party has to call for at least 10-15 seconds so that you can receive the call. Call either by voice or by the built-in tone call for this duration.

To answer the received call, switch to OPERATE, push the PTT switch and talk into the speaker/microphone.

To receive weak signals, turn the squelch control fully counter-clockwise so that the ANL is switched OFF.

To switch the transceiver OFF, turn the volume control fully counter-clockwise until a click is heard and the meter needle moves into the black field.

Important:
If you will not operate the transceiver for a long time, remove the batteries from the equipment so that they will not corrode and damage the transceiver.

ACCESSORIES

To install N500AA rechargeable nickel-cadmium batteries, follow the instructions under the Chapter UNPACKING AND CHECKOUT of this manual.

Charge the N500A nickel-cadmium batteries by plugging the 1236 charger into the charger jack. Charge for 14 hours. It is not possible to operate the transceiver during charging.
### PARTS LIST for TS-5612

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<tr>
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<tr>
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<td>Rod Antenna</td>
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<tr>
<td>VR-3</td>
<td>Semi Variable Resistor 10K ohm</td>
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### SPECIFICATIONS

**GENERAL:**
- Dimensions: 230(h) x 78(w) x 43.5(d) mm
- Weight: 800 grams without batteries
- Powersupply: 8 penlight dry cells (12 volts) or 10 penlight rechargeable nickel-cadmium batteries (12.5 volts)
- Cabinet: Aluminium die cast front and high impact ABS back
- Channels: 12 channels
- Controls: volume; squelch; ANL; standby; operate; call; channel
- Microphone: internal microphone/speaker combination
- Semiconductors: 2 integrated circuits; 16 transistors; 2 FET; 17 diodes
- Special Feature: Electronic T/R switching; 12 channels; standby battery saver; switchable automatic noise limiter; S, power and battery meter; active audio filter type speech processor.

**RECEIVER:**
- Frequency range: 27.005 to 27.135 MHz
- Sensitivity: 0.5 μV for 10dB S+N/N and 100 mW output at 30% 1KHz modulation
- Selectivity: 6KHz at -6 dB
- Adjacent channel rej: better than 50 dB average
- Audio output at 10%: 250 mW
- Spurious response: more than 50 dB down
- Intermodulation: more than 50 dB down
- Crossmodulation: more than 50 dB down
- Squelch sensitivity: less than 0.1 μV
- Noise limiter: automatic series gate
- Power consumption:
  - Receive mode (standby): 8 mA
  - Receive mode (full audio): 60 mA

**TRANSMITTER:**
- Frequency range: 27.005 to 27.135
- Modulation capability: 100%
- Modulation distortion: less than 5% at 95% modulation
- Frequency tolerance: 1,200 Hz at -20 to +50 degrees C