DUKANE SEACOM INC.

TECHNICAL MANUAL
ULTRASONIC TEST SET
MODEL TS500

MAY 22, 2017
REV A

This manual should be read in its entirety prior to operation of the TS500 Test Set

SECTION I
GENERAL INFORMATION

1.1. INTRODUCTION

1.1.1. GENERAL. This manual contains the description, operation and maintenance of the TS500 Ultrasonic Test Set manufactured by Dukane Seacom, Inc., 7135 16th Street East, Suite 101, Sarasota, FL 34243. See Figure 1.

1.1.2. SYMBOLS AND ABBREVIATIONS. All symbols and abbreviations used in this manual are in accordance with the ANSI Y14.15 and MIL-STD-12, respectively.

1.2. GENERAL DESCRIPTION

1.2.1. FUNCTION. The TS500 is a battery operated heterodyne type receiver that operates at an ultrasonic frequency of 8.8 kHz and 37.5 kHz. The test set was designed primarily as a self-contained, hand held functional tester for testing the Low Frequency Underwater Acoustic Beacons (DK180) and Recorder Mounted Underwater Acoustic Beacons (DK100 Series). Utilizing the internal microphone, LED indicator and loudspeaker, the Test Set can perform an operational test on Dukane Seacom, Inc. beacons without removing the beacon from its mount. The test set can also be used to perform a voltage measurement to test the battery in a Dukane Seacom, Inc. underwater beacon.

1.2.2. SPECIFICATIONS. The specifications for the TS500 are given in Table 1

Figure 1. Ultrasonic Test Set Model TS500

TABLE 1. TS500

ULTRASONIC TEST SET SPECIFICATIONS

Size	3.3" x 6.5" x 1.2" (8.4 cm x 16.5 cm x 3.0 cm)
Weight	13 ounces (368 grams)
Battery*.....	9 Volt

* NEDA Type 1604A

SECTION II
OPERATION

2.1. OPERATION

A. Turn the test set ON using the small slide switch located on the left side of the housing.

B. If the display reads LB, the TS500 battery voltage has fallen below the level required for operation of the test set and the 9 Volt battery should be replaced. See Maintenance Section 3.2.

C. Testing Beacon Voltage. Choose the appropriate cable for the beacon (large clip for the DK180 (8.8 kHz) and smaller clip for the DK100 series (37.5k Hz)). Attach the test probe clip to the beacon case. See Figure 2. Place the tip of the probe in contact with the silver pad on the white dome at the end of the beacon. The display will show the battery voltage of the beacon. Refer to the appropriate beacon manual for the acceptable range of the beacon battery voltage.

D. Operational Test. Place the probes on the beacon as described above and press the red button on the TS500 (the test set display will be blank during this operation). The beacon should activate and a sound will be audible from the TS500. Please note that high levels of background noise can interfere with this test. If difficulty is experienced in hearing the beacon, the operator should repeat the test in a quieter area.

The TS500 LED Indicator will also illuminate when the beacon is actively pinging. The LED Indicator will illuminate "RED" for each 37.5 kHz ping and "GREEN" for each 8.8 kHz ping.

Note: To accommodate timely functional and acceptance testing, the Low Frequency Underwater Acoustic Beacon (DK180) is configured to generate a 10mS pulse about once per second for the first 10 minutes of operation. The pulse repetition rate reduces to about once per 10 seconds after that.

Figure 2. Testing Beacon

SECTION III
MAINTENANCE

3.1. BATTERY LIFE

3.1.1. The test set battery should be replaced when its load voltage has dropped to 7 volts or the display reads LB when the test set is turned on.

3.2. BATTERY REPLACEMENT

3.2.1. Any 9 Volt battery may be used but longer service will be obtained by the use of premium batteries such as NEDA Type 1604A. The battery is accessible in the Test Set by removing the battery access door on the bottom rear of the case and dropping out the old battery. A snap type connector facilitates change of battery and prevents reversal of polarity, but as an additional precaution, always turn the test set off before making the battery change.

3.3. TEST SET CALIBRATION

3.3.1. The TS500 Test Set is calibrated at the factory during manufacture. Under normal operating conditions the test set will not require calibration for a period of 15 months. The calibration due date is shown on the back of the test set.

3.3.2. For calibration procedures, please contact Dukane Seacom, Inc. or refer to the calibration procedures in the CT200 manual.

SECTION IV
WARRANTY TEST SETS

Dukane Seacom, Inc. warrants that the Test Set (referred to as the unit) will be free from defects in materials and workmanship, when used under normal operating conditions as determined solely by Dukane Seacom, Inc., for a period of one (1) year from the date of shipment from Dukane Seacom, Inc.

As the sole remedy for breach of the foregoing warranty, Dukane Seacom, Inc. shall repair or replace, at Dukane Seacom, Inc.'s option, any unit, component or part thereof found defective or nonconforming within said one (1) year period from the date of shipment. Customer shall give Dukane Seacom, Inc. notice of any defect or nonconformity and, if so instructed by Dukane Seacom, Inc., customer shall, at its expense, ship the unit, component or part to Dukane Seacom, Inc.. If Dukane Seacom, Inc. determines that the unit, component or part is actually defective or nonconforming, it shall, at its expense, ship a new or a rebuilt unit, component or part to the customer. The customer shall be responsible to perform, at its own expense, any necessary installation work related to any defective or nonworking unit, component or part. The functionality and operational aspects of the unit is determined by the unit operating within the specifications and is dependent of proper maintenance as required to be performed by the customer.

Dukane Seacom, Inc. shall not be liable for any expense or damages resulting from interruptions in the operation of the unit.

Dukane Seacom, Inc. shall not be liable for the cost of any repairs undertaken by the customer or any third party without Dukane Seacom, Inc. prior written authorization.

Dukane Seacom, Inc. shall not be liable for any incidental, special consequential or exemplary damages arising out of the installation, use, testing, servicing or maintenance of any unit, component or part. This warranty is given in lieu of all other warranties, express or implied, included the warranties of merchantability or fitness for a particular purpose.

Dukane Seacom, Inc.'s total liability under this warranty is limited to the remanufacture or replacement of the unit, component or part .