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**DUKANE CORPORATION
SEACOM DIVISION**

**TECHNICAL MANUAL
ULTRASONIC TEST SET
MODEL TS200**

**April 20, 2001
REV 00**

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This manual should be read in its entirety prior
to operation of the TS200 Test Set

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SECTION I

GENERAL INFORMATION

1.1. INTRODUCTION

1.1.1. GENERAL. This manual contains the description, operation and maintenance of the TS200 Ultrasonic Test Set manufactured by Dukane Corporation, Seacom Division, 2900 Dukane Drive, St. Charles, Illinois 60174. 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 TS200 is a battery operated heterodyne type receiver that operates at an ultrasonic frequency of 37.5 kHz. The test set was designed primarily as a self-contained, hand-held functional tester for testing underwater acoustic beacons. Utilizing the internal microphone and loudspeaker, the Test Set can perform an operational test on Dukane Corporation DK Series beacons without removing the beacon from its mount on the aircraft. The test set can also be used to perform a voltage measurement to test the battery in a Dukane underwater beacon.

1.2.2. SPECIFICATIONS. The specifications for the TS200 are given in Table 1.

**TABLE 1. TS200
ULTRASONIC TEST SET SPECIFICATIONS**

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

* NEDA Type 1604A.



Figure 1. Ultrasonic Test Set Model TS200

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 TS200 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. Attach the test probe clip to the pinger case. See Figure 2. The clip has a spring action that will allow it to slip over the housing on the beacon. 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 TS200 (the test set display will be blank during this operation). The beacon should activate and a pinging sound will be audible from the TS200. 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.



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 TS200 Test Set is calibrated at the factory during manufacture. Under normal operating conditions the test set will not require calibration for a period of one year. The calibration due date is shown on the back of the test set.

3.3.2 For calibration procedures please contact Dukane Corporation or refer to the calibration procedures in the CT200 manual.

SECTION IV WARRANTY TEST SETS

Dukane Corporation 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 Corporation, for a period of one (1) year from the date of shipment from Dukane Corporation.

As the sole remedy for breach of the foregoing warranty, Dukane Corporation shall repair or replace, at Dukane Corporation'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 Corporation notice of any defect of nonconformity and, if so instructed by Dukane Corporation, customer shall, at its expense, ship the unit, component or part to Dukane Corporation. If Dukane Corporation 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 determine by the unit operating within the specifications and is independent of proper maintenance as required to be performed by the customer.

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

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

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