



**D-90032**

**FIELD TEST PROCEDURE MANUAL  
MILITARY ALTIMASTER  
MA-10UD**

September 1<sup>st</sup>, 2015

REV J



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1. **PURPOSE:**

This field test procedure is to be used to verify the readiness state of MA-10UD altimeters in accordance with the design specifications set forth by Alti-2, Inc.

This procedure is intended for use by personnel who are familiar with the basic functions and operation of military lighted altimeters intended for Military Free Fall parachuting operations.

**SCOPE:**

This field test procedure is to be used to verify Altimaster MA-10UD altimeters for readiness by dynamic functional testing.

This procedure applies to Altimaster MA-10UD altimeters that display either Linear (12,000 FT dial face) or Compressed (30,000 FT dial face) altitude scales; metric versions included.

This test procedure requires the use of an Alti-2 TC-10 or TC-21/22 Test Chamber. Use of any other test chamber is left to the discretion of the user.

Alti-2, Inc. assumes no responsibility for the validity of test results obtained by use of any other test chamber other than a TC-10 or TC-21/22.

Use of this test procedure for any other purpose other than its intended use is strictly prohibited.

**CYCLIC TESTING:**

MA-10UD conducts a self-test each time it is switched on and does not require periodic cycle testing.

The electronic pressure sensor in MA-10UD is much more accurate than the reference altimeter in most altitude test chambers. Zeroing the device also serves as a self-test of the pressure sensor. If MA-10UD will not zero, factory service is required.

At the user's discretion, MA-10UD may be tested initially upon receipt and every 90 days or as needed using the following procedures.

2.



## MATERIALS AND EQUIPMENT NEEDED FOR THIS TEST

Qty (1) TC-10 or TC-21/22 Test Chamber or equivalent.

Qty (2-10) MA-10UD Altimeters

Note: Ensure the master altimeter is within calibration.

3.



## BATTERY STATE

To turn the unit on press and hold the Activate Button marked "SEL" and the press ON/OFF Button marked "I/O".

The pointer will first show battery status:

3 to 7 (White) = OK

2.5 - 3 (White) = Change batteries soon.

Less than 2.5 (Red) = Change batteries before the next jump.

### Corrective action:

If the battery status is low, less than 3, replace prior to testing.

If the battery state is greater than 7, **do not use**. Return to Alti-2 for repair.

4.



## BACKLIGHT TEST

This test is recommended prior to night jumps.

With MA-10UD switched on and in a lighted room. Verify that the backlight is off and the LED is on.

With MA-10UD switched on, enter a dark room and verify that the backlight comes on and the LED is off.

### Corrective action:

If the backlight does not come on, do not use for night jumps. Send to Alti-2 for repair.

5.



## AIR FLOW THROUGH FILTER

### Step 1

Refer to operating instructions for TC-10 or TC-21/22 for this test.

Ensure the master altimeter is within calibration. The master altimeter must be set according to actual MSL elevation of your test location.

\*Test location +/- 500 FT MSL -Set master altimeter to 0 FT MSL.

\*Test location greater than +/-500 FT MSL, set master altimeter to the nearest 1000 FT MSL.

Set the MA-10UD altimeters to the same setting as the master altimeter.

Place two or more MA-10UD altimeters into the test chamber.

6.



## Step 2

Run the test chamber up to approximately 30,000 feet while performing the next step.

### Pointer movement:

Visually observe the movement of the pointer during ascent.

Unacceptable sweep movement will be as follows:

- Pointer movement stops then jumps 1000 FT or more.
- Pointer not moving at all.
- Pointer displays more than 600 FT difference during ascent compared to the master altimeter.

7.

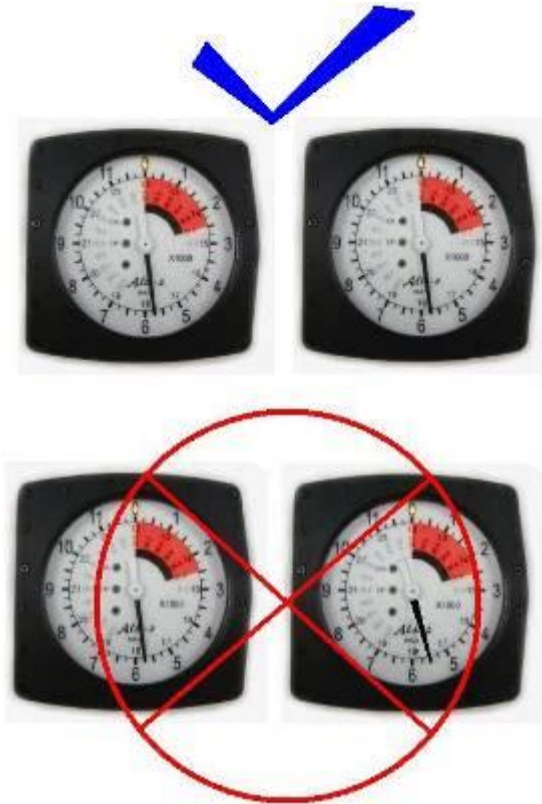


## Step 3

Establish "free fall" descent rate at 10,000 feet per minute: (6 seconds per 1,000 feet).

Note: To properly test the air flow through the filter, the MA-10UD must be tested as if they were in "free fall".

8.



Step 4

- Visually compare the MA-10UDs under test during "free fall" with each other and the master altimeter for any that lag behind the group.
- Reading difference must be 250 FT or less below 8,000 FT and 500 FT or less above 8000 FT.
- **This is not an accuracy test. It is testing the air flow through the filter.**

**Corrective action:**

Do not use the altimeter with the difference greater than 250 FT. Send to Alti-2 for repair.

9.



**WRIST STRAP CHECK**

Visually check wrist strap for excessive wear. Check for strap wear near both strap retainers.

**Corrective Action:**

Replace strap if required.

10.



**LOCKING LEVER CHECK**

Step 1

Pushing the battery door lever past the lever lock will allow the battery door to open.



11.		<p>Step 2</p> <p>Verify that the battery door lever is held in the locked position via the lever lock using finger pressure.</p> <p><b>Corrective Action:</b></p> <p>If lever lock does not secure battery door lever, do not use, send to Alti-2 for repair.</p>
12.		<p><b>PHYSICAL DAMAGE CHECK</b></p> <p>Visually verify that both filter ports are free of contamination.</p> <p>Non critical:</p> <p>Scratches and abrasions</p> <p>Critical failures:</p> <ul style="list-style-type: none"><li>Button failure</li><li>Movement failure</li><li>Fastener failure</li><li>Case failure</li><li>Intermittent power</li><li>Debris in filters</li><li>Lever lock failure</li><li>Button sealing failure</li><li>Lens cracks</li></ul> <p><b>Corrective Action:</b></p> <p>If there are any critical failures, do not use, send to Alti-2 for repair.</p>