

Zebra-Tech UW-Calipers



Operation Manual

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1. Your UW-Calipers at a glance



UW-CALIPERS WITH OVERBITE, CHARGER AND COMS CABLE

The Zebra-Tech UW-Calipers are rugged field calipers designed to operate accurately and reliably in harsh environments and underwater to a depth of 40 meters.

At the push of a button the UW-Calipers record the caliper measurement, together with the time and date as well as depth if the optional depth sensor is installed.

Data collected by the UW-Calipers can be offloaded onto a PC and then simply opened in an Excel spreadsheet.

Features

The UW-Calipers offer the following features:

- Rugged design
- Simple to operate, even while wearing thick dive gloves
- One or two button operation
- Rechargeable on-board battery with long operating capacity
- Capacity to store 8000 records
- Simple windows software for offloading collected data
- USB communication



UW-CALIPERS WITH 60MM JAWS FITTED

2. UW-Caliper specifications

Specifications

Maximum depth:	30m
Maximum caliper measurement:	240mm
Caliper resolution:	0.5mm
Caliper accuracy:	Closing jaws +/-1mm or better between 0-40°C
Depth resolution (optional):	0.1 meter
Memory:	8000 records (each record consists of Caliper measurement, depth (if fitted), time, date. Data is non-volatile; if the battery goes flat, data is not lost).
Battery endurance:	+40 hours on a full charge

Options

Depth sensor:	Depth sensor which enables depth to be recorded with each measurement
Jaw length:	60mm or 90mm jaw size Custom jaw profiles available on request
Button:	Single button, or two button



FIELD SWAPPABLE 60MM AND 90MM JAWS

3. Charging your UW-Calipers

Unscrew the charging/coms cap from the end of the calipers.

Push on the charging plug. Tighten the locking sleeve.

Plug the charger into mains power; the red ‘Power’ LED should be continuously illuminated. For the first minute, the green ‘Ready’ LED should flash. This indicates the battery status is being tested. After one minute the green ‘Ready’ LED will stop flashing while the red ‘Charge’ LED will remain illuminated.

When charging is complete, the red ‘Charge’ LED will go off, and the green ‘Ready’ LED will flash (trickle charge).

After charging, disconnect the charger from the mains power.

Disconnect the charging cable from the UW-Calipers.

Clean and re-grease the O ring on the charging/coms cap.

Screw the cap back onto the UW-Caliper. **Do not over tighten.**



UW-CALIPERS WITH CHARGING/COMS CAP UNSCREWED



4. Operating your UW-Calipers

Switching On

Simply press the blue button to switch on your UW-Calipers. The green light will light up briefly and the current caliper measurement will be displayed.

Switching Off

The calipers automatically switch off if the outer jaw is not moved for 5 minutes.

Taking a measurement

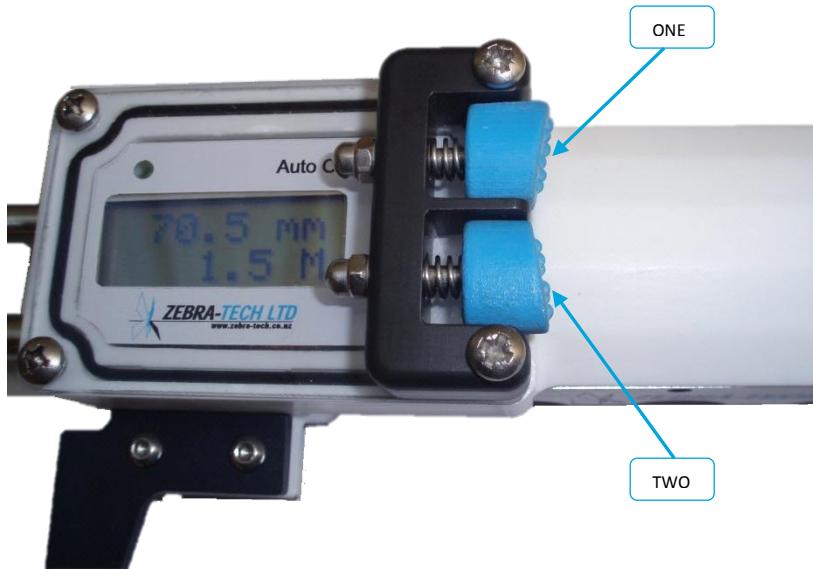
Open the outer jaw of the UW-Caliper wider than the object being measured. Then gently close the jaws on the object.

The UW-Calipers are calibrated for measuring on a closing jaw action. If the jaw movement directly prior to a measurement is in the opening direction, then the accuracy of the measurement will be reduced.

Logging a measurement

By simply pressing and releasing the blue button, the current caliper measurement is logged, together with the current time and date, and the water depth if the calipers incorporate the optional pressure sensor.

If your caliper has 2 buttons, whichever button is pressed is logged in the data file. This enables measurement differentiation. For example, you can differentiate between 2 species, or length and width measurements.



TWO BUTTON UW-CALIPER

A break in the data file can be created by logging a closed jaw or fully open jaw measurement. For example, if measurements are being made along a transect, a zero measurement can be logged at the end of the transect. This can then be identified in the data file.



ONE BUTTON UW-CALIPER

Tare the UW-Calipers

When the calipers are gently closed, they should display 0.0mm. If they don't, they can be tarred by pressing and holding the blue button. After 10 seconds 'Tare' should appear on the display. The blue button can then be released.

5. Communicating with your UW-Calipers

Installing UW-Caliper software onto a PC



NOTE!

It is recommended that the UW-Caliper software is installed BEFORE the calipers are connected to the PC for the first time.

The UW-Calipers are supplied with a flash drive that carries the file 'Install UW-Caliper version #'. Simply double clicking this file should start the installer which handles the installation of the software onto the PC.

The latest version of the software can also be downloaded from the Zebra-Tech web site <http://www.zebra-tech.co.nz/downloads>

Connecting the UW-Caliper to a computer

Unscrew the charging/coms cap from the end of the calipers.

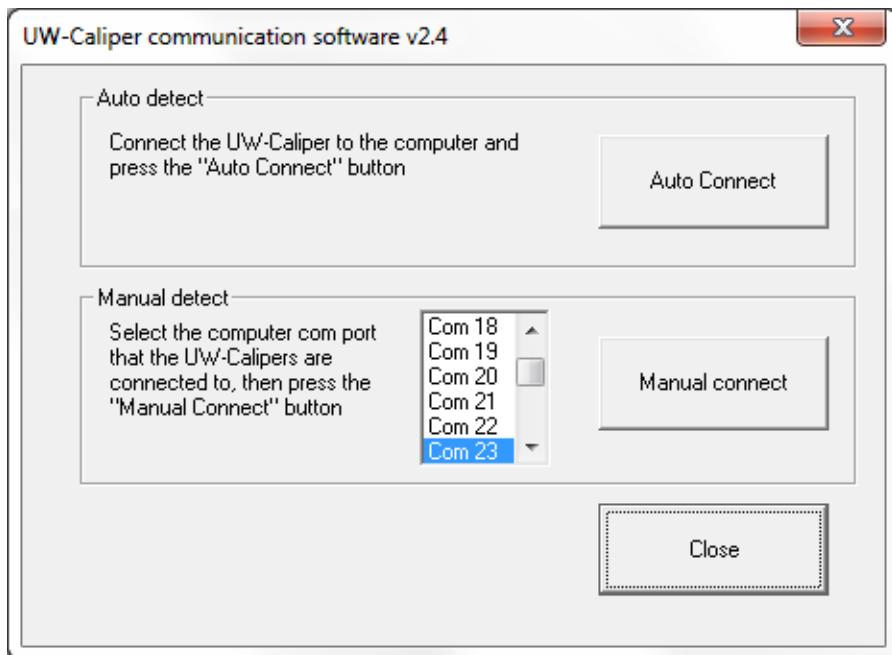
Push on the communication cable plug, and tighten the locking sleeve.

Plug the USB connector into the PC, and start 'UW-Caliper' software.



UW-Caliper Software

When the UW-Caliper is connected to a PC and the software started, the connection window should open.



UW-Caliper Connection Window

Your computer has many ‘com ports’. When the UW-Calipers are plugged into a USB port, the computer assigns it a com port. The com port number may be the same as previously assigned or it may have changed.

To simplify connection, UW-Caliper software features both an ‘Auto Detect’ and ‘Manual Detect’ option.

Auto detect

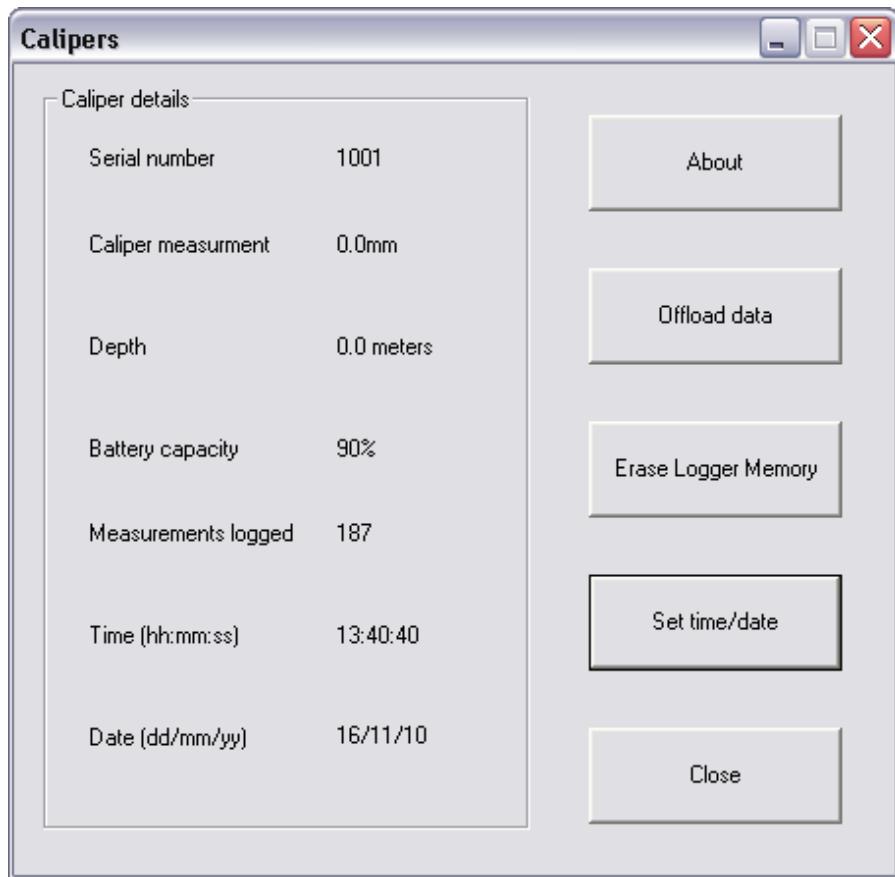
If the UW-Calipers have not previously been connected to the computer or the manual connection doesn’t find the UW-Caliper, then the auto detect option is recommended to initiate communications.

Pressing the ‘Auto connect’ button causes the computer to systematically check all available com ports for the UW-Calipers. This takes a little time, but generally locates them in the end.

Manual detect

If the UW-Calipers have been successfully connected to the PC in the past, then pressing the ‘Manual connect’ button quickly reconnects using the same com port.

Once the UW-Calipers have been successfully connected, the main window opens.



About

This button displays the current UW-Caliper firmware and software versions.

Offload Data

This button enables stored data to be offloaded from the UW-Calipers to the designated file. A text box opens enabling comments to be typed directly into the header of the data file.

Erase Logger Memory

This deletes all data off the UW-Calipers. This should be undertaken after data has been successfully offloaded from the calipers.

Set Time/date

This sets the UW-Caliper time and date to PC time and date.

After communication, disconnect the UW-Caliper from the coms cable. Clean and re-grease the O-ring on the coms/charging cap. Screw the cap back onto the UW-Caliper, but do not over tighten.

6. Data file

The data file is formatted as comma separated values (.csv). This can be opened in Excel.

Headers are inserted at the top of the data file during the download.

Example data file:

Serial number	Button	Date (dd/mm/yy)	Time (hh:mm:ss)	Caliper (mm)	Depth (meters)
112	2	22/11/2011	7:32:01	44	7.9
112	1	22/11/2011	7:32:03	44	7.9
112	1	22/11/2011	7:32:08	44	7.9
112	1	22/11/2011	7:32:10	44	7.9
112	2	22/11/2011	7:35:35	21	7.8
112	2	22/11/2011	7:35:36	21	7.8
112	2	22/11/2011	7:35:38	21	7.8
112	2	22/11/2011	7:35:40	21	7.8
112	2	22/11/2011	7:35:42	21	7.8
112	2	22/11/2011	7:35:44	21	7.8
112	1	22/11/2011	7:41:02	21.5	7.7
112	2	22/11/2011	7:41:05	21	7.7
112	2	22/11/2011	7:41:07	21	7.7
112	1	22/11/2011	7:41:09	21.5	7.7
112	1	22/11/2011	7:56:02	134	7.4
112	1	22/11/2011	7:56:03	134	7.4
112	1	22/11/2011	7:56:04	134	7.4
112	1	22/11/2011	7:56:04	134	7.4
112	1	22/11/2011	7:56:08	134	7.4
112	1	22/11/2011	7:56:54	134	7.4
112	1	22/11/2011	7:56:54	134	7.4
112	1	22/11/2011	7:56:54	134	7.4
112	1	22/11/2011	7:56:55	134	7.4
112	1	22/11/2011	7:56:56	134	7.4
112	1	22/11/2011	7:56:58	134	7.4
112	1	22/11/2011	7:56:59	134	7.4
112	1	22/11/2011	7:57:00	134	7.4
112	1	22/11/2011	7:57:01	134	7.4
112	1	22/11/2011	7:57:02	134	7.4
112	1	22/11/2011	7:57:03	134	7.4

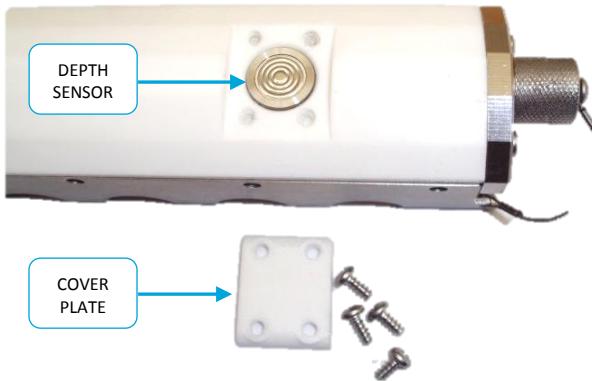
7. Maintenance

The UW-Calipers should be washed after every day of field use. Mud can be hosed off and then salt water rinsed off by washing under a tap.

The UW-Calipers should be dried and lubricated prior to storage. To lubricate, ensure the two caliper guide rods are dry and then apply a few drops of the supplied lubricant onto each rod. Work the caliper backwards and forwards a few times to distribute the lubricant.

If fitted, the depth sensor may require cleaning. If the depth measurement reported rises significantly beyond 0m when the UW-Calipers are not submerged in water, then it is possible that sediment has built up on the face of the depth sensor.

To clean the depth sensor, carefully remove the 4 screws in the pressure sensor cover plate and remove the plate. **DO NOT TOUCH THE DEPTH SENSOR WITH YOUR FINGERS OR ANY OBJECT.**



UW-CALIPER DEPTH SENSOR – COVER PLATE REMOVED

Using a syringe filled with water, or a similar device, gently wash sediment off the depth sensor face. It may be necessary to soak the sediment overnight.

Once the depth sensor is clean, replace the cover. **DO NOT OVERTIGHTEN THE COVER RETAINING SCREWS.**

8. Further Assistance

For further assistance with this or any other **Zebra-Tech** product, please contact:

Zebra-Tech Ltd
PO Box 1668
Nelson 7040
New Zealand

Tel: International 0064 3 548 0468

Fax: International 0064 3 548 0466

Email: enquiry@zebra-tech.co.nz

For up to date information about Zebra-Tech products, please visit the **Zebra-Tech Ltd** website at: <http://www.zebra-tech.co.nz>.

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