



ZEBRA-TECH LTD

www.zebra-tech.co.nz

Instrumentation and equipment for
environmental monitoring and research

OPERATION DIVE CALIPER MANUAL

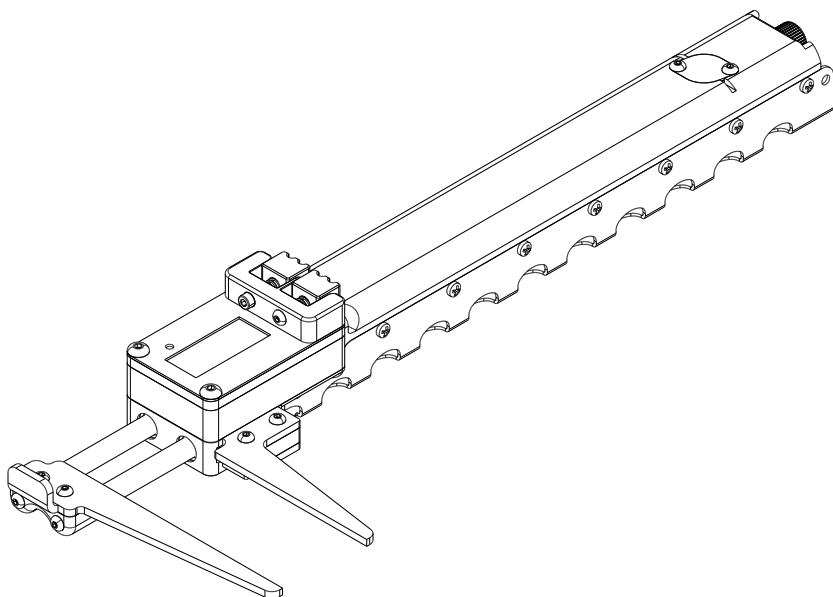


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1. INTRODUCTION

The Zebra-Tech Dive Caliper is a tough two hand caliper that is designed to operate accurately and reliably in harsh underwater environments up to a depth of 30 metres.

The large size and accessible position of the buttons enables the Dive Calipers to be operated even while wearing thick gloves. One button and two button versions are available.

When a button is pushed, the Dive Caliper records the caliper measurement together with time, date and depth (depth sensor is optional). Data collected by the Dive Caliper can be offloaded onto a PC via included USB cable and then simply opened in any spreadsheet that supports .csv files.

The Dive Caliper is designed for daily use with a long life rechargeable battery and the capacity to store 8000 records.

2. OPERATION

CHARGING

The Dive Caliper is fitted with a USB magnetic connector. The contacts on this connector are gold plated to prevent corrosion. The following precautions apply to the use and maintenance of this connector which should ensure trouble free service.

1) Do not apply any abrasive or sharp object which could scratch the surface of the contacts. Clean carefully with soft cloth only.

2) Ensure the contacts are clean and dry before connecting the USB cable. Also keep the USB cable in a dry place.

To charge, connect the Dive Caliper via USB cable to PC or USB AC adaptor.

The charging status is communicated on the display as either "charging" or "charged". A full charge takes approximately 2.5 hours.



SWITCHING ON

Press either of the buttons to switch on your Dive Caliper. The green light will light up briefly and the current caliper measurement will be displayed.

SWITCHING OFF

The Dive Caliper automatically switches off if the outer jaw is not moved for 5 minutes.

TAKING A MEASUREMENT

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



NOTE! The Dive Caliper is calibrated for measuring on a closing action. If the jaw movement directly prior to a measurement is in the opening direction, then the accuracy of the measurement will be reduced.



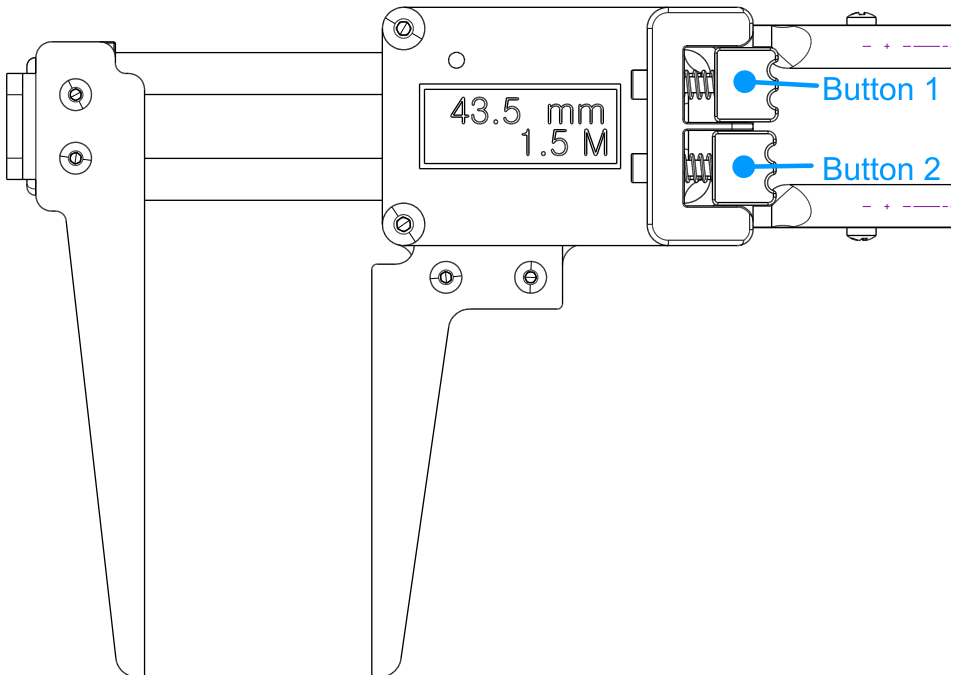
NOTE! Time must be set using the software. Please refer to page 10.

LOGGING A MEASUREMENT

By pressing and releasing the blue button, the current caliper measurement is logged together with the current time, date and water depth (if optional depth sensor fitted).

If your Dive 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.

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.



ZEROING THE DIVE CALIPER

When the caliper is gently closed, it should display 0.0mm. If it does not, it can be zeroed by pressing and holding Button 1. After 5 to 6 seconds 'Tare' should appear on the display. The button can then be released.

INSTALLING DIVE CALIPER SOFTWARE ONTO A PC



It is recommended that the Dive Caliper software is installed BEFORE the caliper is connected to the PC for the first time.

The Dive Caliper is supplied with a flash drive that carries the file 'Install UW-Caliper version #2.61'. 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 website: <http://www.zebra-tech.co.nz/downloads>

DOWNLOADING DATA

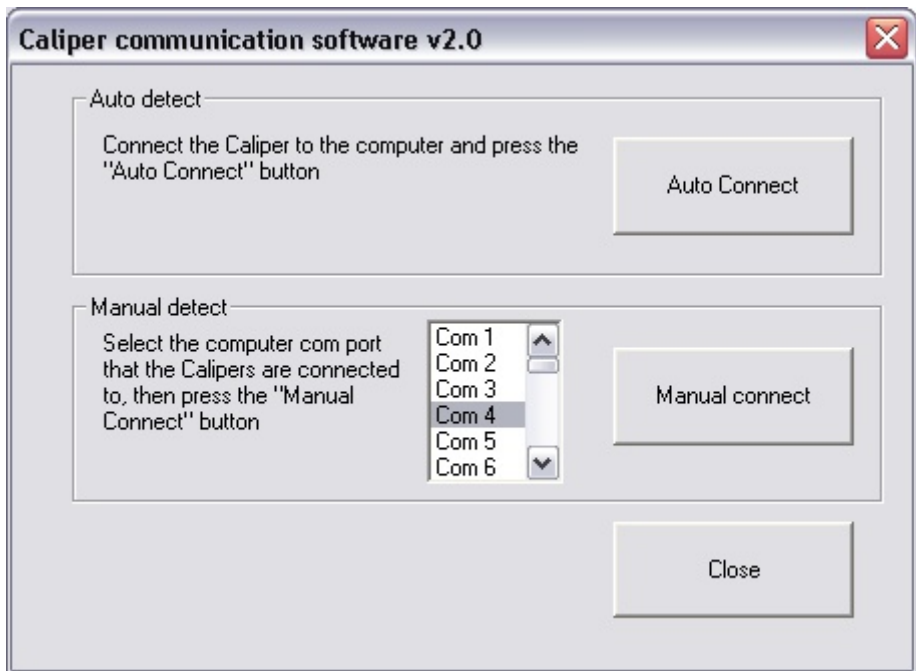
Connect the dive caliper to a computer. When connecting to a PC for the first time, the USB drivers require installation as follows:

The USB to serial adaptor cable will auto install the drivers required for operation under Windows 10. Make sure the computer is connected to the internet and plug in the cable, progress can be observed by clicking on the device icon in the taskbar, also if you look under Device Manager and expand the "Ports (COM & LPT)" tree, the device will appear after successful enumeration and associate with its assigned Com port.

Alternatively the drivers may be located and manually installed from the manufacturers webpage: <https://www.ftdichip.com/Drivers/VCP.htm>

DIVE CALIPER SOFTWARE

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



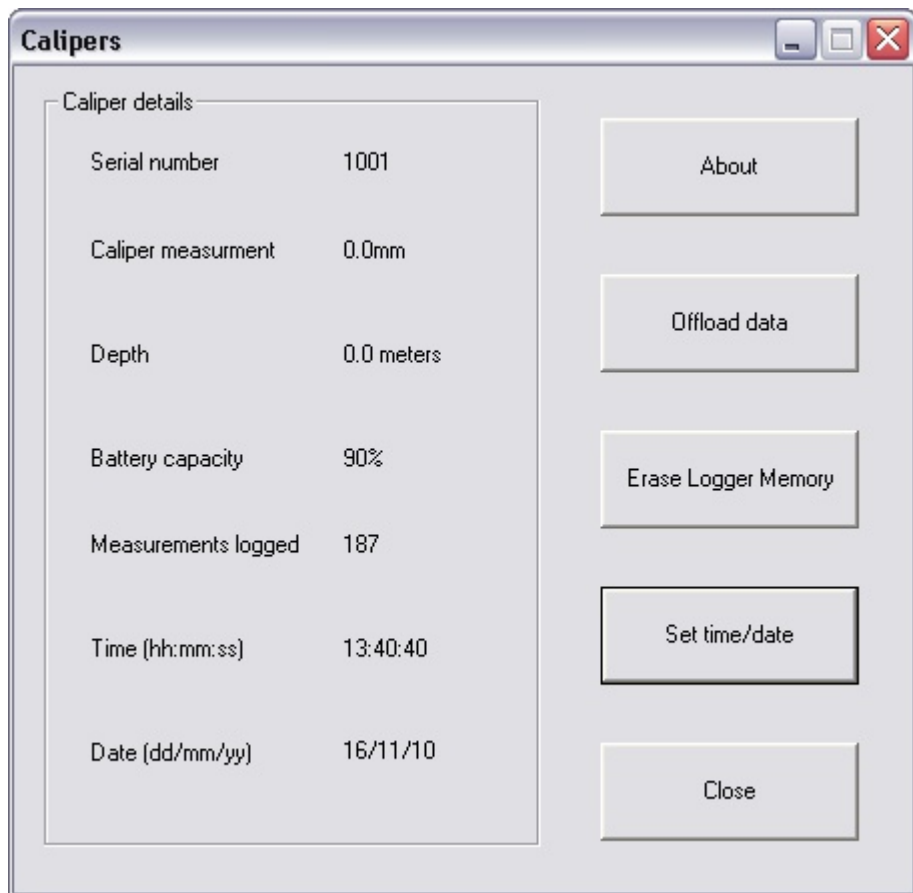
DIVE CALIPER CONNECTION WINDOW

Your computer has many 'Com ports'. When the Dive Caliper is 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, Dive Caliper software features both an 'Auto Detect' and 'Manual Detect' option.

DIVE CALIPER MAIN WINDOW

Once the Dive Caliper has been successfully connected, the main window opens.



- **About:** This button displays the current Dive Caliper firmware and software versions.
- **Offload data:** This button enables stored data to be offloaded from the Dive Caliper 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 Dive Caliper. This should be undertaken after data has been successfully offloaded from the caliper.
- Set time/date: This sets the Dive Caliper time and date to PC time and date.

After communication, disconnect the Dive Caliper from the USB cable.

DATA FILE

The data file is formatted as comma separated values (.csv). This can be opened in any spreadsheet program that supports .csv files.

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

Example data file shown below:

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

3. MAINTENANCE

CLEANING

The Dive Caliper 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 Dive Caliper 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 moving jaw 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 Dive Caliper is 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 two screws in the pressure sensor cover plate and remove the plate.



DO NOT TOUCH THE DEPTH SENSOR WITH YOUR FINGERS OR ANY OTHER OBJECT.

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.

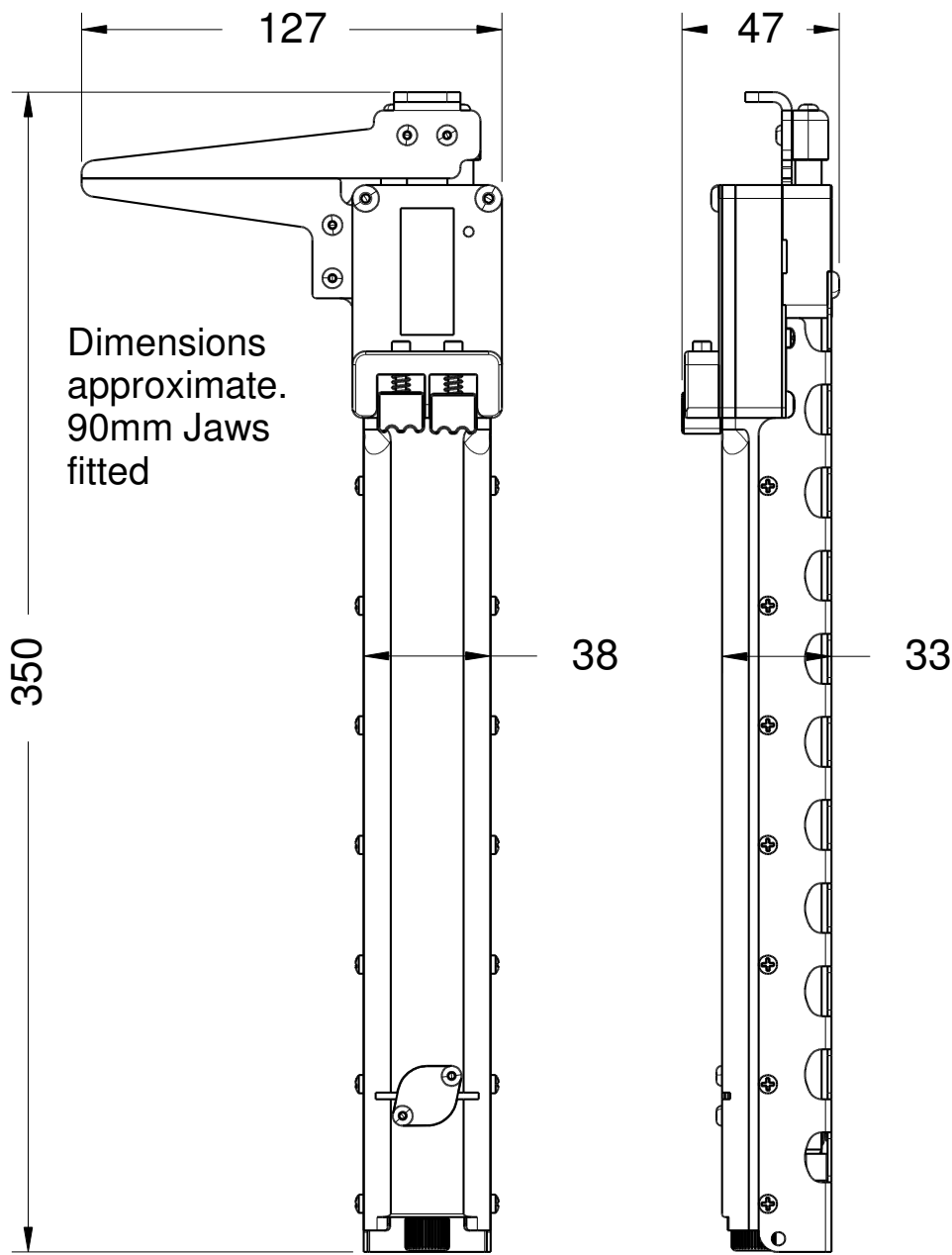


DO NOT OVERTIGHTEN THE COVER RETAINING SCREWS.

4. SPECIFICATIONS

GENERAL	
MEASUREMENT RANGE	0-230mm
ACCURACY	+/- 1mm
RESOLUTION	0.5mm
BATTERY LIFE	Approximately 100 hours
CHARGE TIME	2.5 hrs
DATA STORAGE CAPACITY	8000 measurements
DATA OFFLOAD	PC via supplied software & USB cable
WEIGHT	880 grams

5. OVERALL DIMENSIONS



6. FURTHER ASSISTANCE

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

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PO Box 1668
Nelson 7040
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Tel: International 0064 3 548 0468

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For up to date information about the Dive Caliper and other products available, please visit the Zebra-Tech Ltd website at:

www.zebra-tech.co.nz

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