TRANS INSTRUMENTS
for the professionals

WalkLAB
Digital Dissolved Oxygen meter
HD9030

Operation Manual

INTRODUCTION

Your purchase of this WalkLAB Digital Dissolved Oxygen meter marks a step forward for you into the field of precision measurement. Although this meter is a complex and delicate instruments, its ruggedness will allow many years of use, if proper operating techniques are observed and practiced.

Please read the following instructions carefully and always keep this manual within easy reach.

FEATURES

- Micro-controller technology provides fast, accurate readings with great repeatability.
- Large and easy to read Liquid Crystal Display.
- Fast in-air calibration provides accurate calibration without complicated procedures.
- Low battery indicator provides early warning of weak batteries.
- Uses durable long lasting components including a lightweight chemical resistant HDPP plastic casing.

CONTENT

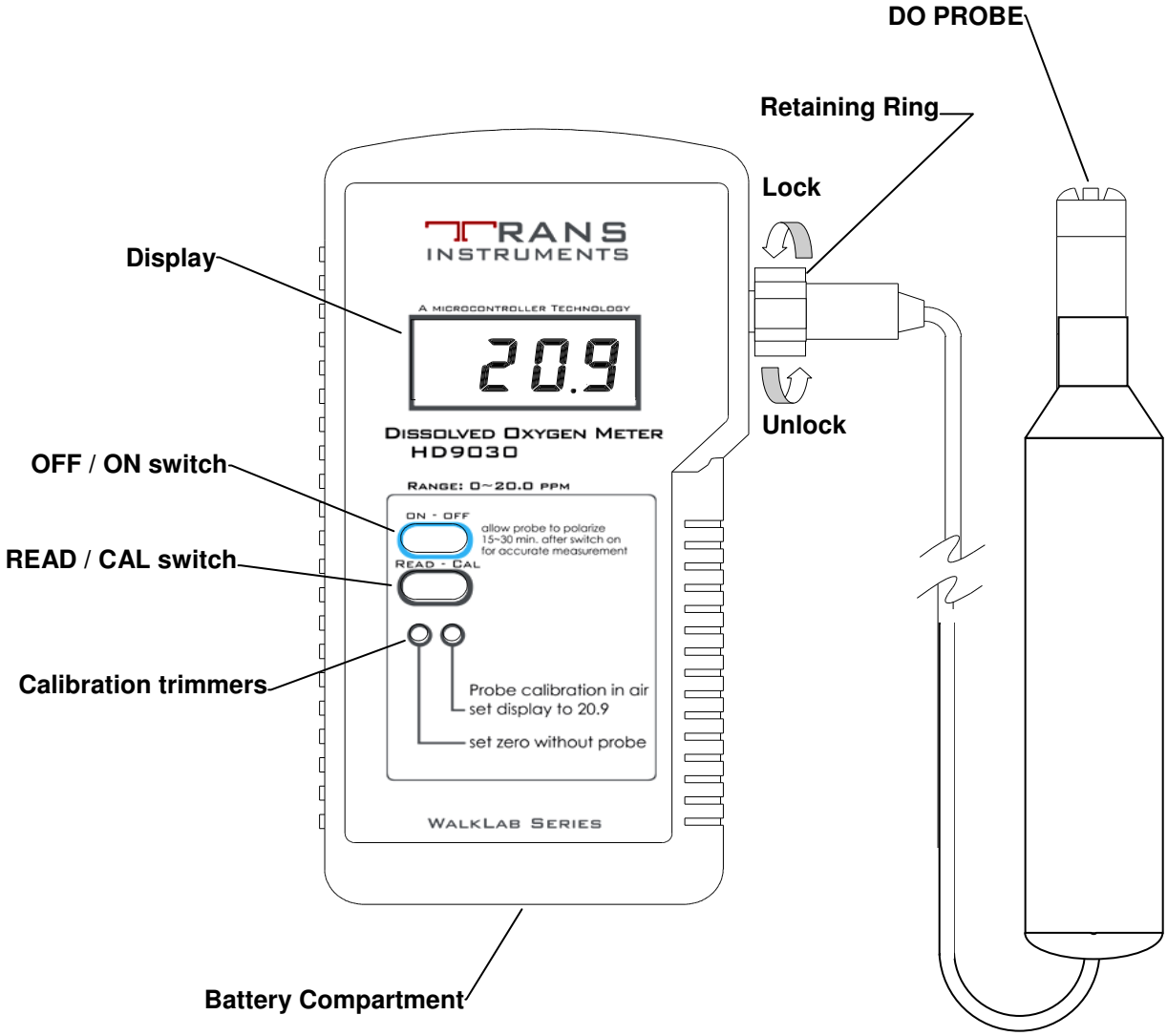
The following list of item is included in the all in one package:

1. Main Unit
2. Dissolved Oxygen Probe with temperature sensor
3. Spare diaphragm membrane Cap, 2x
4. Electrolyte solution, 50ml
5. Calibration screwdriver
6. Operation Manual
7. Salinity Effect Conversion Table
8. Carrying bag

SPECIFICATION

Display	3 ½ digits Liquid Crystal Display
Measuring Range	0 to 20.0ppm
Resolution	0.1 ppm
Accuracy	±0.4ppm
Temperature Compensation	Automatic 0 – 40ºC (32ºF - ºF)
Operating temperature	0 – 50ºC (32ºF – 122ºF)
Operating Humidity	Below 80% R.H.
Battery	DC 9V battery (1604 or equivalent)
Battery life	Approximately 100 hours continuous use
Size (L x W x H)	164 x 83 x 35mm (6.5 x 3.3 x 1.4 inch)
Weight	Approximately 250 gm

PRODCUT LAYOUT



CALIBRATION

1. The probe is supplied without electrolyte for prolonged storage. See **MAINTENANCE** section to add electrolyte on first use.
2. Calibration must be performed under a wide and well ventilated area.
3. Disconnect the Oxygen Probe.
4. Switch 'ON' the unit and slide the 'READ/CAL' switch to 'CAL' position.
5. Adjust the 'ZERO ADJUST TRIMMER' with the provided screwdriver to display 000 if required.
6. Now plug the 'PROBE CONNECTOR' to the unit and wait for 30 minutes for the probe to be fully polarized.

NOTES: Do not switch off the unit or unplug probe from unit. Once the unit is off for 5 seconds, the probe will need to be polarized again for 30 minutes when switched ON.

7. After 30 minutes, use the screwdriver to adjust the 'CALIBRATION TRIMMER' until display shows **20.9**
8. Slide the 'READ/CAL' switch to **'READ'** position. Now the unit is ready for measurement.
9. **CAUTION**: After each successive calibration, never adjust the both trimmers again until the next calibration.

MAKING MEASUREMENT

1. It is advised to perform calibration as in the calibration procedure before a series of measurement.
2. If no calibration is performed, switch on the unit and wait for 30 minutes. **Do not switch off the unit between measuring intervals. (see NOTES above)**
3. Now you can dip the probe into the test solution at least 10cm below water line. **Wait for about 10 to 15 minutes** for full temperature compensation to take place.
4. **Continually stir or jiggle the probe**. This is **required** to prevent error due to polarization at the sensor, which will result in decline of the reading. If possible, a magnetic stirrer should be employed to stir at 0.2 to 0.3mS.

5. Take the reading once it is stabilized and does not decline.
6. This DO meter **only** measure **fresh water** and at the sea level of 760mmHg. Therefore, measuring consideration must be taken if measurement is done in Sea water. Use the attached **Salinity Conversion table** to easily convert displayed reading to real reading.

HOW TO USE SALINITY EFFECT CONVERSION TABLE:

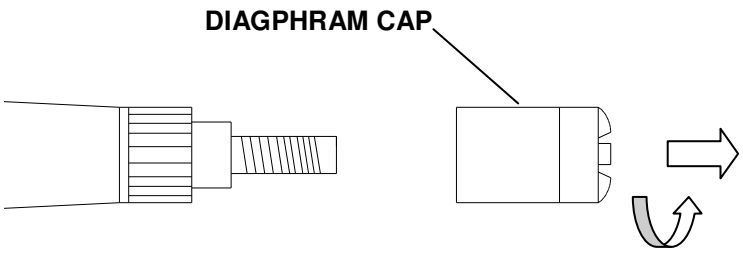
1. You must find out the salinity of the water you are measuring in ppt (parts-per-thousand).
2. After taking a stabilized reading, refer to the table's Meter Reading column pointing at the same number.
3. Run finger across the same row till to the column of the salinity of the test sample.
4. The numbers is the converted reading.
5. No conversion required if water is 0ppt.

MAINTENANCE

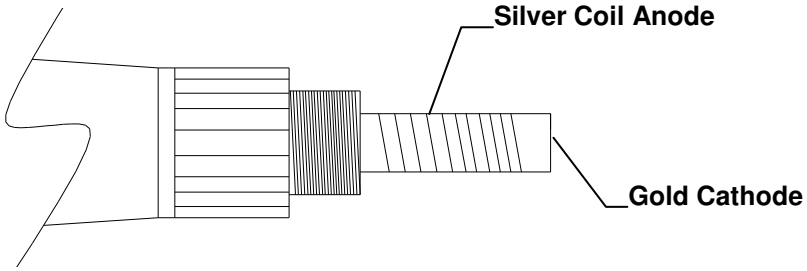
The oxygen probe consists of a diaphragm cap housed over the probe head. This diaphragm is rather delicate and flimsy and is easily damaged if comes into contact with solid objects or subjected to blows.

An erratic reading can be an indication that the electrolyte has dried up or the diaphragm is punctured or damaged. Refill or replace as follows:

1. Unscrew and remove the DIAGPHRAM CAP.



2. Half fill with new electrolyte into the (new) DIAGPHRAM CAP. Lightly tap the container to remove bubbles inside.
3. Screw back tight to the probe. New diaphragm is installed.
4. Wait 30 minutes before measurement.
5. When the probe has been used for sometime, the silver coil anode and gold cathode inside the electrolyte container may get tarnished because of polarization.



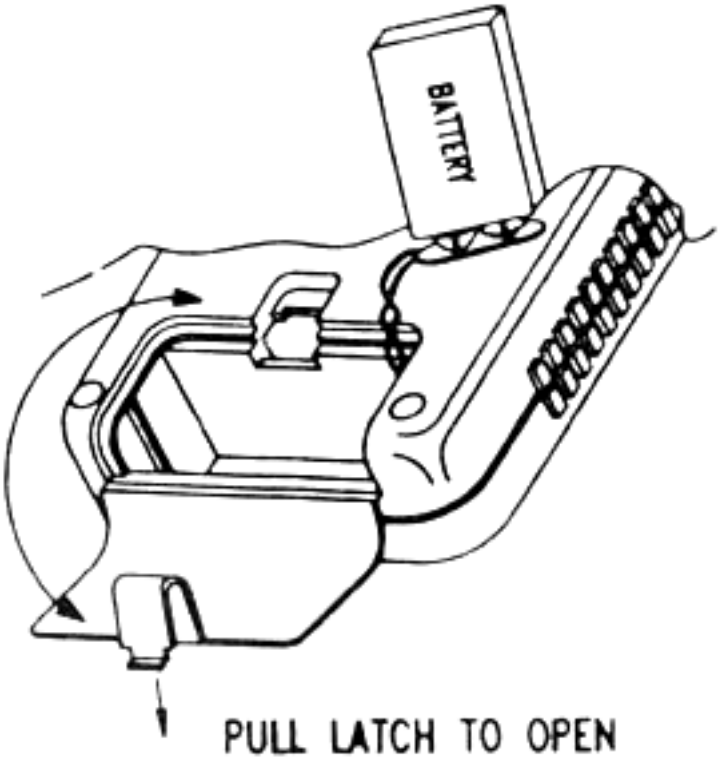
6. To clean the silver coil anode, soak the probe into 3% ammonium hydroxide solution overnight. After soaking, rinse with de-ionized water.

7. To clean the gold cathode, use an extra fine sand paper and polish 5 times with twisting motion or until the gold appears.

The probe should be cleaned only when erratic reading occurs or after about 500 hours of use.
Each cleaning removes material and reduces the life of the probe, excessive cleaning should be avoided.

Replacement of Battery

1. When the left corner of LCD display shows the  low battery symbol, it indicates a normal battery output of less than 6.5 to 7.5 volts. It is necessary to replace the battery. However, measurement may still be made for several hours after the symbol appears before the instrument becomes inaccurate.
2. Pull the latch of the battery cover at the rear bottom of the instrument away from the unit (as below diagram).
3. Detach the battery from the battery clip.
4. Replace with a new DC 9 volts battery (1604 or equivalent). Ensure the correct polarity is connected to the battery clip.
5. Close the cover.



WARRANTY

Trans Instruments (Singapore) Pte. Ltd., warranties this product for a period of 12 months from date of purchase against all defects in material and workmanship.

This warranty does not apply to the abuse or misuse of the instrument. If repairs or adjustments are required, please return the defective product freight prepaid. Instrument within warranty will be repaired at no charge.

Make sure that the product is properly packed and insured against possible damage or loss in shipment.

Purchase invoice **MUST** be accompanied in returned product or else warranty is considered void.

Please obtain authorization from Trans Instruments (Singapore) Pte Ltd. Directly or through your local sales representatives prior to returning the product.

Trans Instruments staff can be contacted at the following email address or through our web-page contacts:

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