VEE GEE General Use

1. Open the daylight plate and apply one or two drops of the sample solution to the surface of the prism. Hold the prism at an angle close to parallel with the floor so the sample will not run off of the prism.
2. Gently close the daylight plate over the prism. The sample solution should spread as a thin, even layer in between the daylight plate and the prism. By looking through the daylight plate, ensure that the sample solution covers the ENTIRE surface of the prism. If there are bubbles and gaps or if the sample is only on one portion of the prism, the sample solution must be reapplied (Figure 1). Inaccurate readings will result if the prism is not covered correctly.
3. Looking through the eyepiece, hold the refractometer and direct the daylight plate upwards towards light. If the scale is not in focus, adjust it by gently turning the eyepiece (rubber hood) either clockwise or counterclockwise. Be careful not to overtum the focusing mechanism.
4. When the refractometer scale is viewed through the eyepiece, the upper field of view will be seen as blue and the lower field will be seen as white (Figure 4). The reading is taken at the point where the boundary line of the blue and white fields crosses the scale (Figure 5). The value (either permillage or specific gravity) is the salinity level of water.
5. When each measurement is complete, the sample must be cleaned from the prism using tissue paper and water.

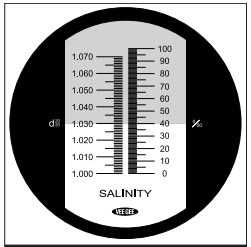
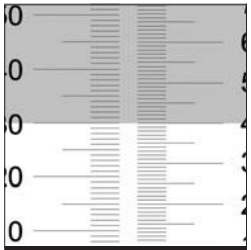


Figure 4


Figure 5

VEE GEE Conversion Table

Salinity (‰)	Salinity (PPM)	NaCl (w/w)	$MgCl_2$ (w/w)	$MgSO_4$ (w/w)	K_2SO_4 (w/w)	$CaCl_2$ (w/w)	Brix%
0	0	0.0	0.0	0.0	0.0	0.0	0.0
10	10,000	1.0	0.7	0.9	1.4	0.8	1.3
20	20,000	2.1	1.4	1.8	2.9	1.5	2.5
30	30,000	3.1	2.1	2.7	4.3	2.3	3.7
40	40,000	4.1	2.8	3.6	5.8	3.0	4.9
50	50,000	5.1	3.5	4.5	7.3	3.8	6.2
60	60,000	6.2	4.2	5.4	8.8	4.5	7.4
70	70,000	7.2	5.0	6.3	10.3	5.3	8.6
80	80,000	8.3	5.7	7.2	11.8	6.0	9.8
90	90,000	9.4	6.4	8.2	13.4	6.8	11.0
100	100,000	10.5	7.2	9.1	15.0	7.6	12.3

VEE GEE Specifications

Range: 0-100‰ / 1.000-1.070 Specific Gravity

Resolution: 1.0‰ / 0.001 Specific Gravity

Accuracy: ±1.0‰ / ±0.001 Specific Gravity

ATC Range: 10-30°C

Dimensions: 40 x 40 x 185mm (1.6 x 1.6 x 7.3")

Weight: 285g (10.0 oz.)

Supplied With: Vinyl Carrying Case (1), Plastic Transfer Pipet (1), Calibration Screwdriver (1)

VEE GEE® Refractometers

Warranty information and registration form can be found at:
www.veegee.com/service_support

Printed in China

VGMNL010320-43036

VEE GEE® Refractometers

Operation Manual
Model STX-3



Salinity 0-100‰

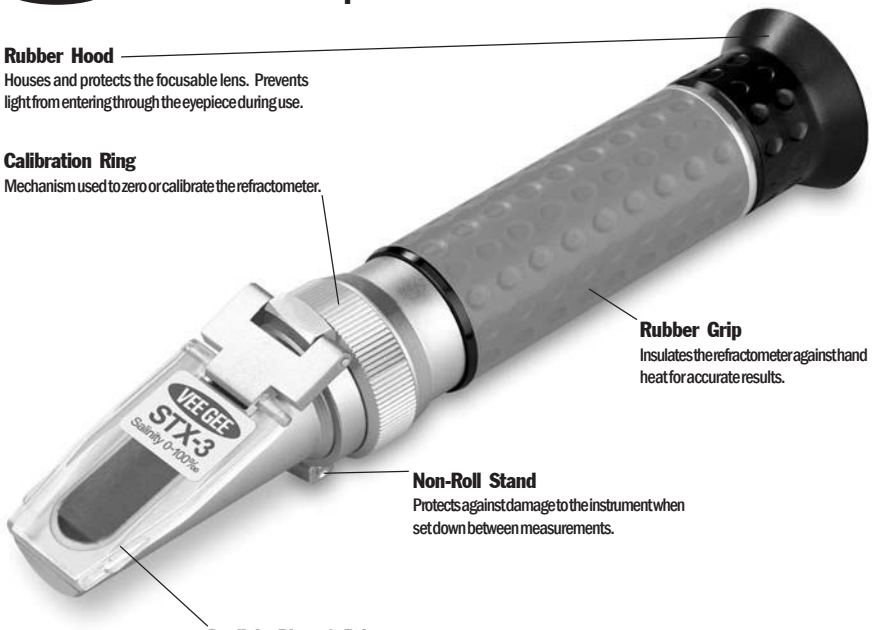
Automatic Temperature Compensation

Cat. No. 43036

VEE GEE Introduction

Thank you for purchasing this VEE GEE Refractometer. With the user in mind, VEE GEE Refractometers are built from modern designs and, with proper care, this instrument should provide many years of reliable performance. It's recommended this manual is read entirely before using the refratometer for the first time.

VEE GEE Refractometer Components



VEE GEE Precautions

- This refractometer is an optical instrument -- it can become damaged if dropped or handled in a rough manner.
- The prism is made of optical glass and is susceptible to scratches -- do not apply any rough or abrasive material and take care when cleaning the prism.
- After each use, clean the prism surface and daylight plate with a soft cloth or tissue soaked in water and wipe off with a dry cloth or tissue.
- Do not hold the refractometer under a stream of water from a faucet. Do not splash it with or dip it in water.
- If the surface of the prism becomes coated with an oily solution or similar, it will repel test samples and affect readings. If this occurs, the prism should be cleaned with a weakened detergent or similar solvent.

VEE GEE Automatic Temperature Compensation

VEE GEE Model STX-3 Refractometer is equipped with an Automatic Temperature Compensation (ATC) mechanism. Refractometers that do not feature such a mechanism must be recalibrated (zeroed) when shifts in ambient temperature occur, or make use of a temperature correction table. Model STX-3 automatically compensates for ambient temperature changes (10-30°C), so recalibration is not required.

With continued use, the calibration setting on ATC refractometers can shift over time . It's good practice to periodically check the refractometer by conducting a measurement of distilled water. If the reading is more than one subdivision from zero, the refractometer should be manually calibrated. Please refer to the Calibration section below.

DO NOT PERFORM CALIBRATIONS IN THE FIELD! Calibration must take place in a controlled environment of 20°C (68°F) using distilled water of the same temperature. It's recommended to allow the refractometer and the distilled water to reach temperature equilibrium with the controlled environment before calibration takes place.

VEE GEE Calibration

1. Calibration of ATC refractometers should only be conducted when the previous calibration setting has shifted and is noticeably affecting measurements. **DO NOT PERFORM CALIBRATIONS IN THE FIELD!** Calibration must take place in a controlled environment of 20°C (68°F) using distilled water of the same temperature. It's recommended to allow the refractometer and the distilled water to reach temperature equilibrium with the controlled environment before calibration takes place.
2. Open the daylight plate and apply one or two drops of distilled water on to the surface of the prism. Hold the prism at an angle close to parallel with the floor so the distilled water will not run off of the prism.
3. Gently close the daylight plate over the prism. The distilled water should spread as a thin, even layer in between the daylight plate and the prism. By looking through the daylight plate, ensure that the distilled water covers the ENTIRE surface of the prism. If there are bubbles and gaps or if the distilled water is only on one portion of the prism, the distilled water must be reapplied (Figure 1). Inaccurate calibrations will result if the prism is not covered correctly.
4. Looking through the eyepiece, hold the refractometer and direct the daylight plate upwards towards light. If the scale is not in focus, adjust it by gently turning the eyepiece (rubber hood) either clockwise or counterclockwise. Be careful not to overturn the focusing mechanism.
5. When the refractometer scale is viewed through the eyepiece, the upper field of view will be seen as blue and the lower field will be seen as white (Figure 2). Confirm that the boundary line crosses the scale at "0" (Figure 3).
6. If the boundary line falls above or below zero, gently loosen the set screw on the calibration ring with the supplied screwdriver. While looking through the eyepiece, gently turn the calibration ring clockwise or counterclockwise until the boundary line is at zero. Once this is achieved gently tighten down the set screw with the supplied screwdriver. (NOTE: Do not over-tighten. If the set screw is over-tightened, the boundary line may shift slightly).
7. When calibration is complete, gently wipe the prism using tissue paper.

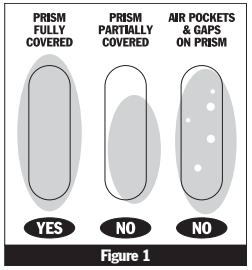


Figure 1

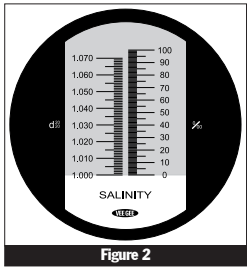


Figure 2

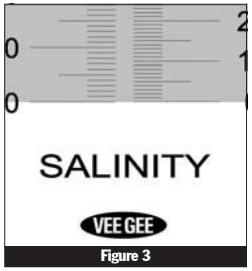


Figure 3