VEE GEE Temperature Correction Table

For Refractometers Calibrated At 20°C (λ=589nm)

Model BX-90 is factory-calibrated to conduct readings at 20°C. For the best accuracy, if ambient temperature falls above or below 20°C, temperature correction values should be applied to readings. When a reading is taken under these circumstances, note the temperature value from the thermometer mounted on the side of the refractometer and simply apply the temperature correction values listed below. For example, a reading of Brix 40.0% at 25°C is corrected to Brix 40.4%; a reading of Brix 65.0% at 10°C is corrected to Brix 64.25%.

Brix%

Temperature °C	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
10	0.53	0.56	0.59	0.62	0.65	0.67	0.69	0.71	0.72	0.73	0.74	0.75	0.75	0.75	0.75	0.75	0.74	0.73
11	0.49	0.52	0.54	0.57	0.59	0.61	0.63	0.64	0.65	0.66	0.67	0.68	0.68	0.68	0.68	0.67	0.67	0.66
12	0.44	0.47	0.49	0.51	0.53	0.55	0.56	0.57	0.58	0.59	0.60	0.60	0.61	0.61	0.60	0.60	0.60	0.59
13	0.40	0.41	0.43	0.45	0.47	0.48	0.50	0.51	0.52	0.52	0.53	0.53	0.53	0.53	0.53	0.53	0.52	0.52
14	0.34	0.36	0.38	0.39	0.40	0.42	0.43	0.44	0.44	0.45	0.45	0.46	0.46	0.46	0.46	0.45	0.45	0.44
15	0.29	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.37	0.37
16	0.24	0.25	0.26	0.27	0.28	0.28	0.29	0.30	0.30	0.30	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30
17	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.22
18	0.12	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
19	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
21	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07
22	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15
23	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.22
24	0.27	0.28	0.29	0.29	0.30	0.30	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.30	0.30
25	0.34	0.35	0.36	0.37	0.38	0.38	0.39	0.39	0.40	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.38	0.37
26	0.42	0.43	0.44	0.45	0.46	0.46	0.47	0.47	0.48	0.48	0.48	0.48	0.48	0.47	0.47	0.46	0.46	0.45
27	0.50	0.51	0.52	0.53	0.54	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.55	0.55	0.54	0.53	0.52
28	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.64	0.64	0.65	0.65	0.64	0.64	0.64	0.63	0.62	0.61	0.60
29	0.66	0.67	0.68	0.69	0.70	0.71	0.72	0.73	0.73	0.73	0.73	0.73	0.72	0.72	0.71	0.70	0.69	0.68
30	0.74	0.75	0.77	0.78	0.79	0.80	0.81	0.81	0.81	0.82	0.81	0.81	0.81	0.80	0.79	0.78	0.77	0.75
31	0.83	0.84	0.85	0.87	0.88	0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.89	0.88	0.87	0.86	0.84	0.83
32	0.91	0.93	0.94	0.95	0.96	0.97	0.98	0.99	0.99	0.99	0.99	0.98	0.97	0.96	0.95	0.94	0.92	0.90
33	1.00	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.08	1.08	1.07	1.07	1.06	1.05	1.03	1.02	1.00	0.98
34	1.10	1.11	1.12	1.13	1.15	1.15	1.16	1.17	1.17	1.16	1.16	1.15	1.14	1.13	1.12	1.10	1.08	1.06
35	1.19	1.20	1.22	1.23	1.24	1.25	1.25	1.26	1.26	1.25	1.25	1.24	1.23	1.21	1.20	1.18	1.16	1.13
36	1.29	1.30	1.31	1.32	1.33	1.34	1.35	1.35	1.35	1.35	1.34	1.33	1.32	1.30	1.28	1.26	1.24	1.22
37	1.38	1.40	1.41	1.42	1.43	1.44	1.44	1.44	1.44	1.44	1.43	1.42	1.40	1.38	1.36	1.34	1.32	1.29
38	1.48	1.50	1.51	1.52	1.53	1.53	1.54	1.54	1.53	1.53	1.52	1.51	1.49	1.47	1.45	1.42	1.39	1.36
39	1.59	1.60	1.61	1.62	1.62	1.63	1.63	1.63	1.63	1.62	1.61	1.60	1.58	1.56	1.53	1.50	1.47	1.44
40	1.69	1.70	1.71	1.72	1.72	1.73	1.73	1.73	1.72	1.71	1.70	1.69	1.67	1.64	1.62	1.59	1.55	1.52

(-) SUBTRACT Value From Reading

(+) ADD Value To Reading

Source: ICUMSA, 1974

VEE GEE Specifications

Range:	Brix 0.0-90.0%
Resolution:	0.2%
Accuracy:	±0.2%
Dimensions:	35 x 35 x 200mm (1.6 x 1.6 x 5.7")
Weight:	650g (22.9 oz.)
Supplied With:	Vinyl Carrying Case (1), Plastic Transfer Pipet (1)

VEE GEE® Refractometers

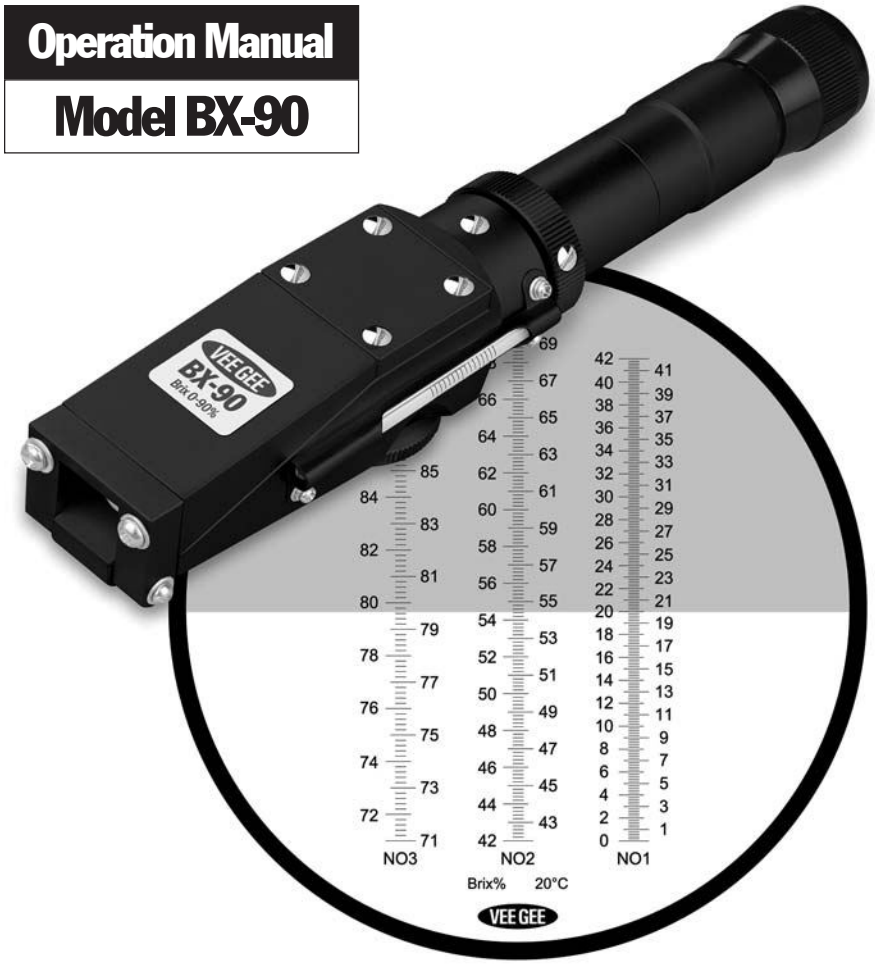
Warranty information and registration form can be found at:
www.veegee.com/service_support

Printed in China

VGMNL010320-43017

VEE GEE®
Refractometers

Operation Manual
Model BX-90



Brix 0-90%

Cat. No. 43017

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

Eyepiece
The eyepiece is focusable to ensure sharp, accurate readings.

Secondary Prism
Covers the primary prism and sample during readings.

Dispersion Dial
Eliminates color/blurriness from the boundary line.

Range Selection Dial
Sets the optics to one of the 3 available scales.

Thermometer
Displays the current temperature of the sample/prism assembly.

Primary Prism
The primary prism and sample are covered by the secondary prism during readings.

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.

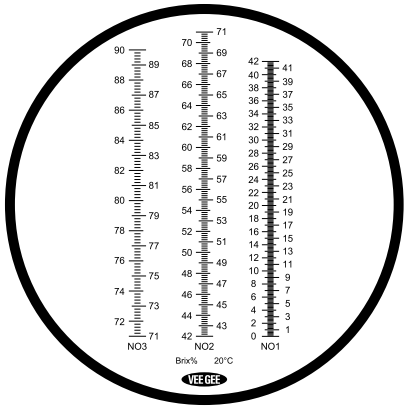
VEE GEE General Use

1. Open the secondary prism and apply one or two drops of the sample solution to the surface of the primary prism. Hold the refractometer at an angle close to parallel with the floor so the sample will not run off of the prism.
2. Gently close the secondary prism over the primary prism. The sample solution should spread as a thin, even layer in between the seconary prism and the primary 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. Before performing a reading, the range selection dial must be set to the range which covers the approximate value of the sample solution. Choose from the following:

RANGE No. 1:
Brix 0.0-42.0%
(RIGHT)

RANGE No. 2:
Brix 42.0-71.0%
(CENTER)

RANGE No. 3:
Brix 71.0-90.0%
(LEFT)



4. If an approximate value of the sample is unknown, cycle through the three ranges and select the range which provides the sharpest contrast at the boundary line.
5. Looking through the eyepiece, hold the refractometer (secondary prism facing up) and direct the prism assembly 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.
6. In the field of view, the boundary line may appear colored and/or blurry (Figures 2 & 3). If this is the case, turn the dispersion dial until the coloring and or blurriness is replaced by sharp contrast.
7. When the refractometer scale is viewed through the eyepiece (with the dispersion dial at the proper setting), the upper field of view will be seen as grey 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 is the Brix% reading of the sample.
8. When each measurement is complete, the sample must be cleaned from the prism using tissue paper and water.
9. This refractometer is equipped with a thermometer indicating the temperature of the sample/prism assembly. These temperature readings are used to calculate temperature correction values when readings are conducted in ambient temperatures above or below 20°C. Please refer to the follwoing page for temperature correction procedures.

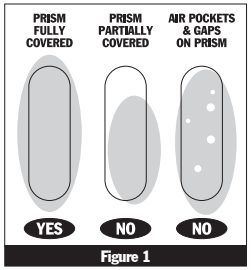


Figure 1

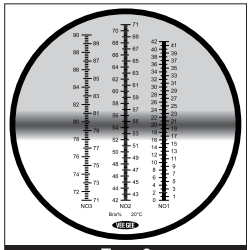
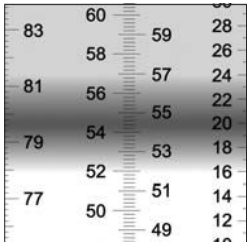


Figure 2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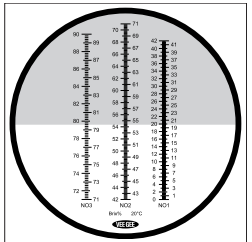
Figure 4

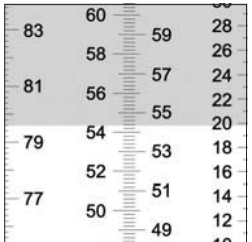
Figure 5