PORTABLE REFRACTOMETER OPERATING INSTRUCTIONS

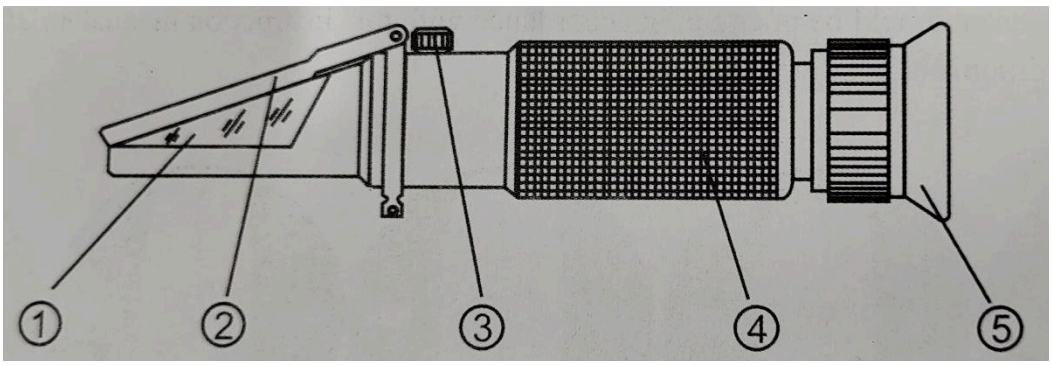
SERIES

STYLE	MODEL ORD/ATC	MEASURING RANGE	ACCURACY	SIZE ⌀ X L/ mm	WEIGHT
BRIX	FG101/111	0 - 10%	0,1%	⌀29 X 160	175g
	FG102/112	0 - 20%	0,1%	⌀29 X 160	175g
	FG103/113	0 - 32%	0,2%	⌀29 X 160	175g
	FG104/114	28 - 62%	0,2%	⌀29 X 148	175g
	FG105/115	40 - 82%	0,5%	⌀29 X 148	175g
	FG106/116	58 - 92% Brix 38 - 43 °Be 12 - 27% water	0,5% 0,5% 0,5%	⌀29 X 148	175g
	FG106a/116	58 - 92%	0,5%	⌀29 X 148	175g
	FG107/117	0 - 50%	0,5%	⌀29 X 148	175g
	FG108/118	0 - 80%	0,5%	⌀29 X 148	175g
	FG109/119	0 - 90%	0,5%	⌀29 X 148	175g

- ORD (Ordinary Type): If the environment isn't at 20°C, the measuring accuracy requires to be zeroed.
- ATC (Automatic Temperature Compensation type): This type is with a built-in ATC device that can compensate temperature range between 10°C – 30°C automatically.

NAME OF COMPONENTS

1. Prism
2. Cover plate
3. Calibrating screw
4. Lens tube
5. Eyepiece (Adjuster of diopter)



APPLICATION

- These models are applicable to test the concentration of sugar in solution.
- FG101/111 and FG102/112 are with a higher precision for testing the sugar solution at low concentration, such as: fruit juice, soft drink, grape wine, etc.
- FG103/113 is applicable for general purpose of sugar testing.
- FG104/114 and FG105/115 are applicable especially to test the sugar concentration in fruit juice, condensed milk, liquid state sugar and jam, etc.
- FG106/116 is applicable for testing of the three common indexes of honey: sugar content, Baume and water content. FG106a/116a is only for the sugar concentration in honey.
- FG107/117, FG108/118 and FG109/119 are designed for testing the sugar concentration with a wide range.

OPERATION PROCESS

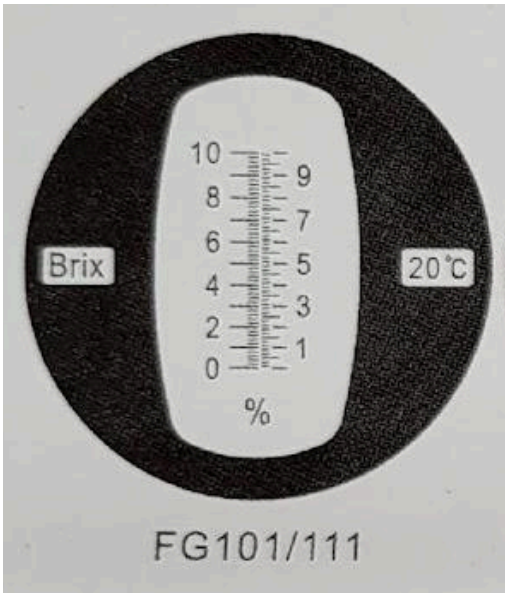
1. Turn the inclining prism of refractometer upside to the direct light source and put one eye close to eyepiece, and then adjust the diopter by turning eyepiece till the scale with digits and letters inside emerges from the image clearly.
2. Calibration before using lift the cover plate (2) and drop one or two drops of pure distilled water on the surface of the prism, then close the cover plate on the surface of prism tightly. Adjust the calibration screw (3) till the light/dark boundary meets the zero line.
- Model of FG104/114 is calibrated by a saturated sodium chlorine solution. The refractive index of the saturated sodium chlorine solution is adjust at 29.9% for 15°C, adjust at 29.6% for 20°C, adjust at 29.2% for 25°C.
- Model FG105/115, FG106/116 and FG106a/116a are calibrated by a reference block that is with one drop of dioptric oil on the side of polished surface. Open the cover plate (2), stick the polished side with dioptric oil of reference block on the surface of the prism and press it tightly in case of sliding down. Rotate and adjust the calibration screw (3) till the light/dark boundary meets the reference scale at 78.8% Brix.
3. Open the cover plate (2) and clean the surface of prism and cover plate by soft cotton flannel, then drop 1 – 2 drops of the liquid needs to be tested on the prism surface. Close the cover plate to the prism surface lightly, the corresponding testing value can be read from the light/dark boundary crossed on scale.
4. After cleaning and drying the surface of prism and cover plate by moist gauze, store refractometer at an appropriate place.

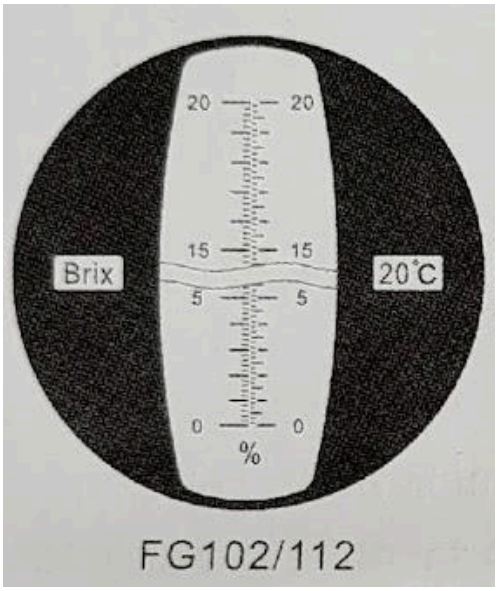
ATTENTION & MAINTENANCE

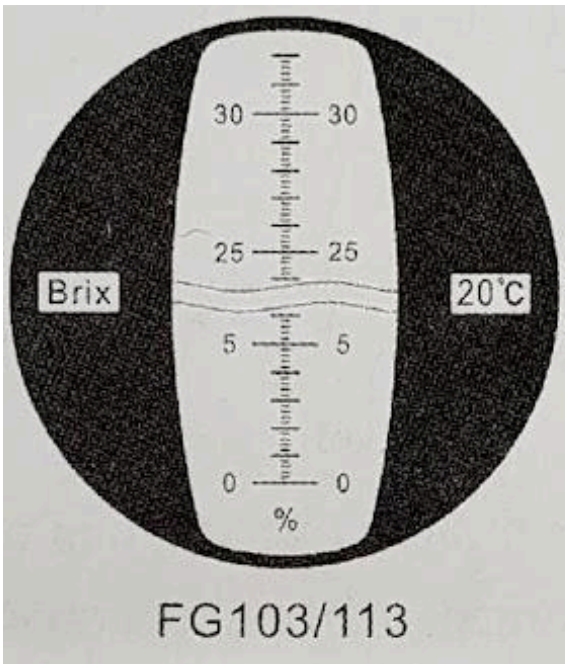
1. The calibration and testing should be at the same temperature. If the temperature is varied, the refractometer should be re-calibrated per each 30 minutes.
2. The prism should be cleaned completely in case that the residual impurity would cause error in testing result. Don’t use water to wash refractometer in order to avoid the built-in components being soaked and damaged.
3. Storage: keep it at a dry, clean and ventilating place and keep it away from the corrosive & volatile material and dampness in case of mildewing and fogging on optical glass.

4. Avoiding touching, scratching on the optical surfaces and avoiding strong shock during transportation; Handling softly and gently.
5. The refractometer should be operated in accordance with this instruction manual strictly so as to keep it in good condition and good optical performance.

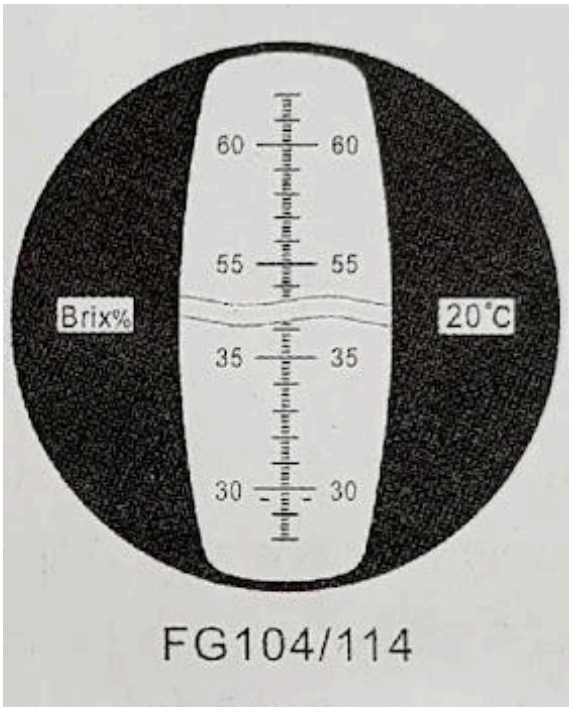
DIALS



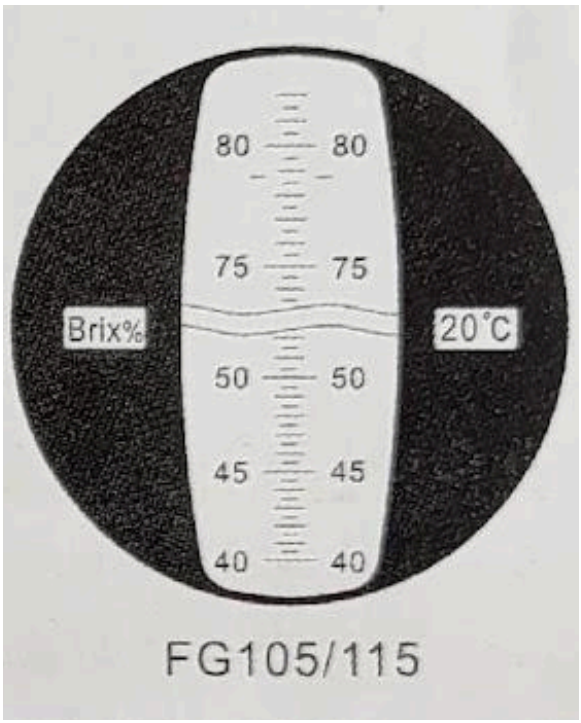




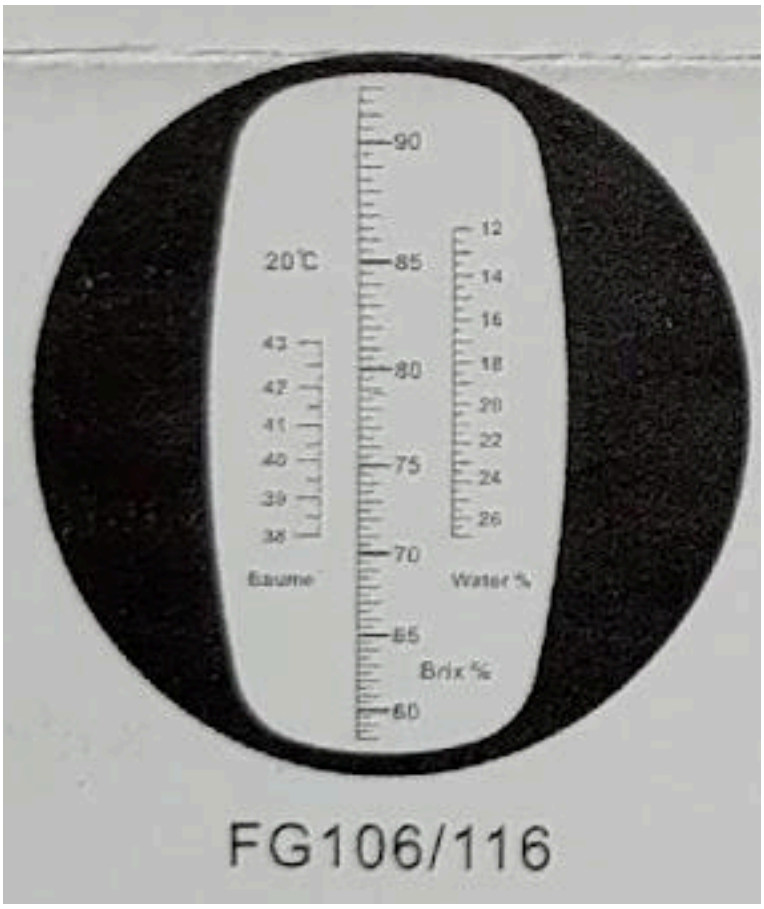
FG103/113



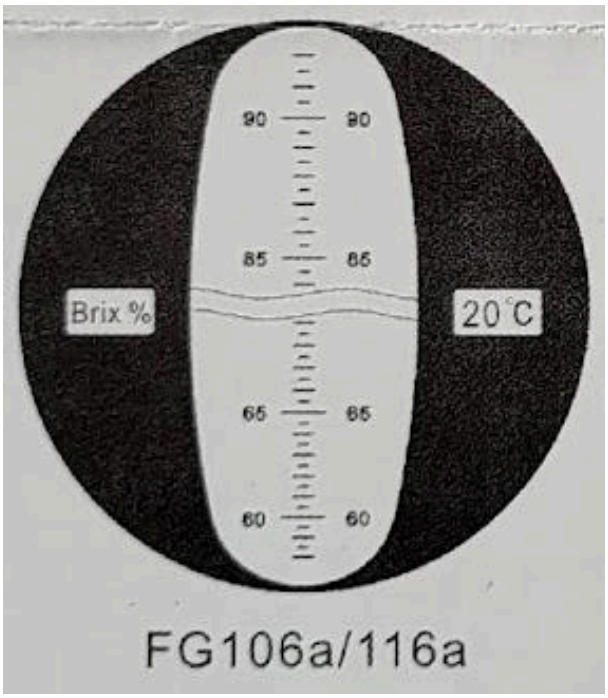
FG104/114



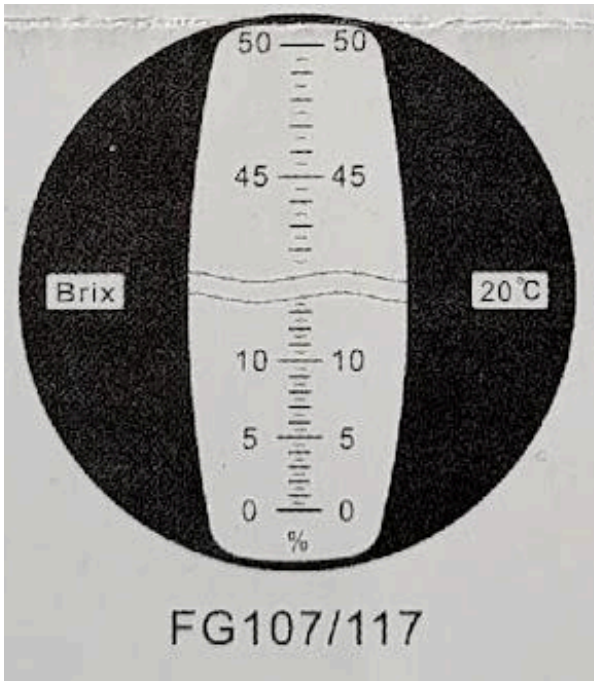
FG105/115



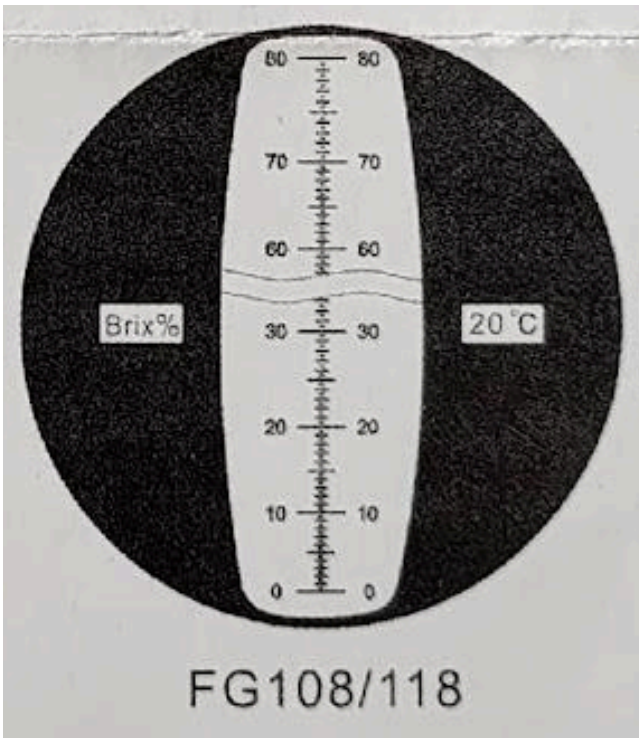
FG106/116

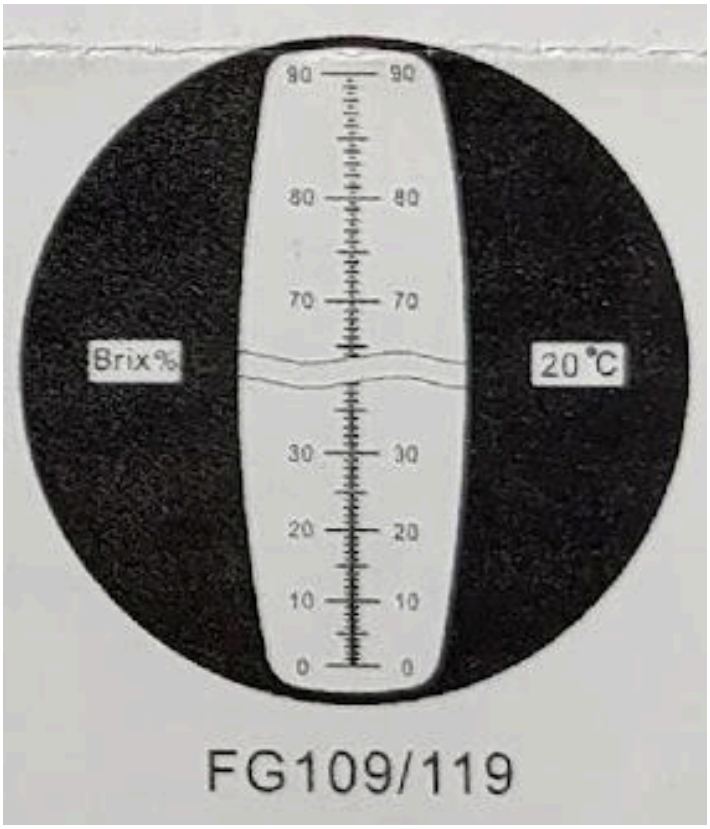


FG106a/116a



FG107/117


80
70
60
30
20
10
0
Brix%
20 °C
FG108/118


90
80
70
30
20
10
0
Brix%
20 °C
FG109/119