

Instructions for the TFA Weather Ball based on an idea by Johann Wolfgang von Goethe

Historical background

It was Torricelli (1608 -1647) who proved that air pressure was subject to variations. In 1643 he devised the first barometer, which was named after him. Goethe, the famous German playwright, who enjoyed carrying out scientific experiments, later developed his own simple, but effective barometer using the basic principles which Torricelli had established.

How it works

The TFA Weather Ball will indicate quickly and accurately any variations in air pressure. Once the ball is filled with liquid, the air which is trapped inside the ball is no longer subject to variations in air pressure. When air pressure rises, the liquid in the attached indicator glass, which is directly affected by air pressure, is pushed downwards and an improvement in the weather can be anticipated. When air pressure falls, greater pressure inside the ball causes the liquid in the indicator glass to rise. A deterioration in the weather can be expected.

Filling and installation

The weather ball is supplied with a 50 ml syringe, some tubing and colouring tablets (normally used for food colouring). Please use preferably distilled water or soil about 500 ml of water and colour the liquid with the tablets to the colour of your choice. By mixing colours, there is no limit to the range of colours which can be created. Fit the tubing on to the syringe and draw up the coloured liquid. Moisten the indicator glass and then insert the tubing entirely into the ball belly. Place the ball horizontally with the indicator glass upright, then inject the contents of the syringe into the ball. For accurate readings and to prevent the liquid from overflowing in bad weather, it is recommended that around 200 ml is used, so repeat the process three more times. Finally cool the instrument, ensuring that the weather ball is horizontal and the indicator glass is upright. The liquid will find its own level according to the current air pressure and the instrument is ready for use as a barometer.

Locate the weather ball away from any places which are liable to major changes in temperature, such as near radiators or by windows.

Tip: Reduce surface tension by adding a small drop of washing up liquid to the boiled water, in this way condensation is kept to a minimum.

Possible lime stains at the bottom of the ball disappear when you fill the ball.

Complaints about deposits caused by the use of non-distilled water will not be accepted by us.

Warning note for operation of the weather sphere and Goethe barometer

In the case of extreme fluctuations of atmospheric pressure (low pressure) or in the case of strong heating, some coloured liquid may escape out of the indicator tube. Please choose the location carefully so that there are no textiles or other sensitive materials underneath the measuring instrument.