

Tendency Barometer User Guide

Contents of Box for A46 Tendency Barometer

In the box you will find:

- Tendency Barometer consisting of:
 - Barometer U-shaped tube with red fluid
 - Thermometer tube filled with blue fluid
 - Tendency Dial – tracks pressure changes
 - The User Manual below on this page.
- Calibration Kit with syringe and plastic tubing.

User Manual

On December 23, 1818, Alexander Adie, an optician from Edinburgh, received his patent for an invention: the Sympiesometer. He named his invention using the Greek words “sumpiesometer” (pressing together) and “metron” (measure). His instrument proved to be a reliable weather predictor. We constructed, according to his patent, a completely new series of very special weather instruments: The Tendency Barometer.

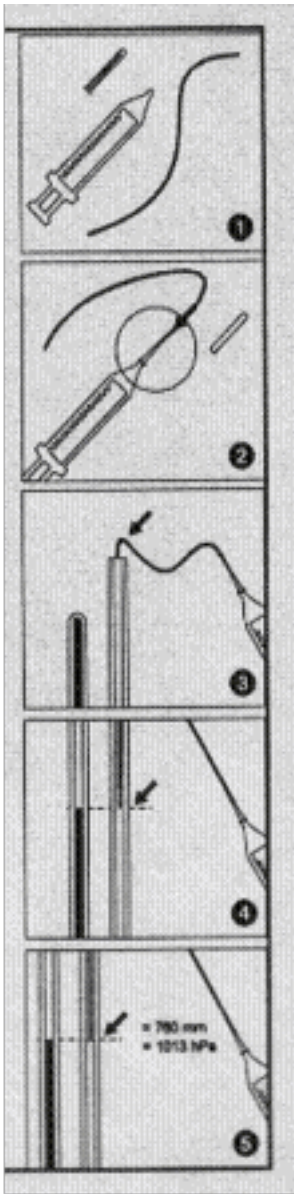
A Tendency Barometer consists mainly of two parts: A U-shaped tube (red fluid) and a thermometer (blue fluid). The red fluid rises or falls according to changes in air pressure. The U-shaped tube is also influenced by temperature, which is the reason why the combination with the thermometer is required. All temperature deviations during the reading of the pressure tendency will be corrected. All you need to do is to compare the level of the red fluid to the blue fluid. The difference between both fluid levels (use the Celsius scale to take difference readings) is set with the pointer on the Tendency scale. The changes in air pressure can be easily observed and an accurate forecast made.

Example: When the red fluid is 6 lines below the blue fluid. -6 (remember, use the Celsius scale to take the difference) the weather forecast is for Fair Weather. When the red fluid is 8 lines above the blue, +8, the forecast is Rainy or Stormy.

When the red and blue fluid levels are **equal**, the weather condition is **Change**.

Red fluid **below** the blue fluid, **Good Weather** (high pressure).

Red fluid above the blue fluid, **Bad Weather** (low pressure)



You can also take actual pressure readings in hPa, which is the equivalent to millibars. The pressure level in millibars is printed around the Tendency dial.

Barometer Calibration

As with all other barometers a tendency barometer has to be set for the local altitude. To calibrate the apparatus, a calibration kit is included. You will need it now. Wear gloves and eye protection. See caution below. Put the needle stub onto the syringe if it is not already installed and remove the protective cover over the needle stub. Carefully slide the thin plastic tube over the needle stub. There should be no air bubbles in the red fluid column. If there are, use the procedure in the troubleshooting section to remove them before continuing.

Find your local air pressure by watching TV such as The Weather Channel, or going onto the Internet to www.weather.com or other such weather web sites. When your local air pressure is equal to 29.92 inches (1013 millibars), remove as much red fluid as needed to make both red and blue fluid level equal with each other. (Note: It might take a few days for the air pressure in your area to pass through 29.92 inches so just keep an eye on the weather until it does.)

The tendency barometer is now calibrated and will only need to be recalibrated if you move to a different altitude. Hang it on a wall away from heat or direct sunlight. Enjoy watching the weather!

Troubleshooting

Problem	Solution
Air bubble near the opening of red fluid tube.	Use the long thin plastic tube to prick through the air bubble
Air bubble nearer the closed end of red fluid tube	<p>Attach the short rubber tube to the open end of the barometer tube.</p> <p>Squeeze the rubber tube until the air bubble goes up into the reservoir end.</p> <p>Second option: Put the instrument upright in the refrigerator for approx. 1 hour.</p> <p>The air bubble will disappear.</p>

Problem	Solution
Barometer not working properly	<p>You are at a higher altitude than the one the instrument is calibrated for.</p> <p>Calibrate the instrument using the above calibration method.</p>
In case of glass breakage.	<p>Wear Gloves. Try to collect the colored fluid and all pieces of glass in a container. The red fluid consists of red pigment in oil; the blue fluid is methyl alcohol. If the red fluid is spilled, absorb it with paper towels or inert material such as sand or kitty litter. Seal in a plastic bag and dispose of as chemical waste according to local codes.</p>
Air bubble in blue thermometer fluid	<p>Heat the bottom of thermometer tube carefully using a hair dryer on low setting.</p> <p>Hold the dryer at least 12 inches from the thermometer tube.</p> <p>Add heat very slowly!! Give fluid time to react. Heating too quickly will break tube.</p>

Caution: The thermometer and barometers tubes contain chemicals that may cause skin irritation in some people. Wear protective gloves when handling the liquid. If skin is exposed, wash with warm water and soap. The chemicals may cause eye irritation if splashed into the eye. Always wear eye protection when handling the liquid. If the eye is exposed to the fluids, flush the eye with warm water to remove. The dyes used in the fluids are very strong colorants and will stain anything they come in contact with. If they get on clothes, wash immediately in soap and water.

Disposal: In case of a spill of the fluids, absorb the fluid with paper towels or inert absorbent material such as sand or kitty litter. Place in a sealed plastic bag and dispose of as chemical waste. Do not flush down the drain, as the chemicals are hazardous to marine life.