

# SUNDIALS

## WHAT TO DO BEFORE BUYING

### WHAT NOT TO BUY

## WHAT TO DO AFTER YOU BOUGHT IT

This document was written by an individual who happens to be a member of both the North American Sundial Society as well as the British Sundial Society. He is also the author of ILLUSTRATING SHADOWS and the book ILLUSTRATING MORE SHADOWS which is due in the fall of 2006.

Over the last year there has been an increase in the number of portable sundials for sale on web based auction sites, and concern has been raised in the email groups about people buying portable sundials that can never work.

No sundial society wishes nor can it regulate the sale of sundials that can never work. However, members of those societies often are concerned of the reputation sundials get as completely inaccurate and worthless.

Sundials can be as accurate as one second, true the location must be exact and the predictable equation of time must be applied somehow. The equation of time enables watches to be corrected to reflect the sun's time as indicated on earth, although nowadays it is used to correct the sundial to the watch. Many simple sundials can be built in a matter of an hour or two that are accurate to within 2 minutes.

## WHAT TO DO BEFORE BUYING

Please visit: <http://www.wiz.to/sundials/>

This website has a very few simple rules about what to look for before buying any sundial. Web site managed by Mike Shaw.

Please visit [http://www.mysundial.ca/sdu/sdu\\_check\\_a\\_dial.html](http://www.mysundial.ca/sdu/sdu_check_a_dial.html)

This website has a more simple rules about what to look for before buying any sundial. Web site managed by Carl Sabanski.

Please visit: <http://www.illustratingshadows.com>

Download the file SIMPLE SHADOWS for free on how to build a sun dial and how it works. Web site managed by Simon Wheaton-Smith

## WHAT NOT TO BUY

There are many fine works coming from the orient. However, there are some that look beautiful but they cannot work.

### LATITUDE ADJUSTABLE ARMILLARY/EQUATORIAL

There is a beautifully wrought armillary sundial for around \$100 or thereabouts usd that looks nice, and in fact is well engineered. However, the latitude index isn't even close to accurate for the armillary that rotates and should be calibrated by it. Looks nice, works if you use a protractor and plumb line, but it is not functional out of the box, not even close. There may be some good cheap ones, but at \$100 or thereabouts usd - buyer beware!



This dial was set to latitude 35 approximately using a construction protractor. The latitude guide has two problems. First it shows about 8 to 10 degrees, secondly the line of the armillary dial plate isn't even parallel to the lines on the protractor of the dial



This dial comes with a level, it is a plumb line and it can only move in one axis. A dial plate when leveled should be level in all axes, which is why the plumb line should be a thread, or two spirit levels used.

I WELCOME COMMENTS FROM SELLERS AS TO WHY THESE DIALS ARE IN FACT CORRECT SUNDIALS AND WILL INCLUDE THOSE COMMENTS IN THIS BOOKLET.  
EMAIL ME AT: [illustratingshadows@yahoo.com](mailto:illustratingshadows@yahoo.com)

## LATITUDE ADJUSTABLE HORIZONTAL

Again, beautifully made, however in almost all cases the latitude index is so far off that it is useless. In one case the dial plate it tilted in the wrong direction. There may be some good cheap ones, but at \$100 or thereabouts usd - buyer beware!



This dial is interesting. It is hard to tell whether it is a horizontal dial or an equatorial dial.

The shadow casting device or gnomon clearly suggests a horizontal dial, and they are made portable by a tilting mechanism.

With the style of the gnomon set level the protractor should show 0 degrees, it shows somewhere from 10 to 20 degrees.

The hour lines of the dial plate are about 17 degrees apart, between 16 and 18 degrees, which suggests an equatorial dial, one whose dial plate parallels the equator, yet the sloped gnomon contradicts that. That is when the angles are measured from the center of the circular dial plate.

If it were a horizontal dial as its gnomon suggests, then the noon and 6 am and 6 pm hours should meet at the base of the complete slope of the gnomon. They do not.



In fact, measuring the hours from the gnomon's base, or dial center, or where the lines seem to converge suggests no real dial design.

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## A TRIANGULAR LATITUDE ADJUSTABLE HORIZONTAL

Again, nicely made, however the latitude index has no connection with real life.



At latitude 14 on the protractor, the gnomon is at 55 degrees.



At latitude 8 on the protractor scale the gnomon's style is set to 90 degrees.

The center of the protractor is not the same as the tilting dial plate's center of rotation.



The dial plate is interesting. What is the direction of, say, the 6 o'clock lines? Where arrows point or from the VI to the dial center?

At latitude 32 the gnomon is too small to cast any shadow at all in the summer.

**A nice dial for the coffee table, but unable to offer the time of day. As they say, this dial plus a dollar gets you a dollar cup of coffee.**

## A CIRCULAR LATITUDE ADJUSTABLE DIAL



Ignoring the rather painful patina, here is a dial that has a dial plate that might work.

However at protractor latitude 10 the style is at latitude zero. The center of the protractor and the center of the dial plate rotation do coincide.

The gnomon size is such that no shadow is visible due to the cutouts in the dial plate.



## A 7 AM TO 5 PM ANTIQUED BRASS PORTABLE HORIZONTAL "COLUMBUS" DIAL



I asked this dealer why 6 am and pm were not perpendicular to noon, the response was he never had a complaint, he had these items made for over 25 years. He just sells and does not understand much about any of the items he sells.

These are reproductions of dials, bearing the names of manufacturers that seem legitimate. Some look nice on the coffee table as long as the room is not well lit. Telling the time is not their forte.

BUYER BEWARE

## LILY PAD DIALS, AND THE LIKE FOR GARDENS, AND PORTABLE DIALS THAT WORK

Many can be made to work by calculating their design latitude and then tilted. The web site for this booklet has a link to the notes on how to do that, and to a spreadsheet to facilitate that. They are free.

However, some have the noon mark correct but the 6am and 6pm below the dial center, and they can never work. There are some good cheap ones, just educate yourself.

Some beautiful armillary dials for gardens have no latitude adjustment, and the dial plate where the time is read is so polished that no shadow may be seen.



This is a good sundial, I have several, and have one I have cherished since the early 1960s. →



These work albeit not latitude adjustable.



One portable multi faceted sundial sold on the web has no gnomons, and its text even says that it is turned so all shadows say the same time, when it is now aligned correctly. Not true except in the rare cases where different modes are used to determine the time, and that dial "ain't one of them". Multi faceted dials will always show the same time on all faces regardless of how they are oriented.

## CAUTIONARY NOTE

Web based auction sites dealers are as a rule an honest group, but they are not diallists. Be very wary of dials for sale on web based auction sites. Some are excellent, but they are not in the \$100 or thereabouts range. If it is around \$100 or thereabouts use then educate yourself, see the notes above for the latitude adjustable dials that simply are incorrect. Some may work fine, some can never function on planet earth.

- Educate yourself with SIMPLE SHADOWS which you may download for free.
- Study the link to a buyer's guides.
- Study closely the dial you want and ask what guarantee exists for its accuracy.
- A guarantee is only as good as the seller's reputation.
- When you get the dial, check the reverse engineering link to verify your dial, and return it asap if it cannot work.
- Check the NASS and the BSS web sites for ideas and reputable diallists, the main page for this web site has links to NASS and BSS web sites.
- Educate yourself.
- Download the SIMPLE SHADOWS book for free.
- YOU ALWAYS GET WHAT YOU PAY FOR WHEN IT COMES TO PURCHASING A SUN DIAL..

## WHAT TO DO AFTER YOU BOUGHT IT

Some dials can never work. If they are portable ones and you like their look, well, OK.

If you want them to work and they are for a garden where they will be fixed in place, then please download for free the REVERSE ENGINEERING guide on this booklet's web site. It shows how to calculate what latitude the dial was designed for, and then how to set it correctly.

The file is called:            [www-reverse-engineering.pdf](http://www-reverse-engineering.pdf)

On the web site:            [www.illustratingshadows.com](http://www.illustratingshadows.com)

## CONCLUSION

This is in no way an all inclusive guide, it is an eye opener, with useful tips. This booklet can be wrong. It is a guide, an eye opener, not an infallible set of rules. It is only a summary. The motto BUYER BEWARE applies very strongly here.

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