

Congratulations on your new Helix Helios!

Piet Hein designed the sundial in 1986 for the park at Egeskov Castle in Denmark.

The unique feature of this sundial is that the shadowcaster and the shadowcatcher have been combined into one unit: a spiral-shaped band that throws a shadow on itself - a construction that is unique in the 3000-4000 years that man has been making sundials. The sundial is available in garden, park and castle models, 2, 4 and 11 metres high, respectively.

Piet Hein's grook on his sundial.

Her ses tiden  
    uformummet  
hentet ind  
    fra himmelrummet  
Helios i eget  
    billed  
i en Helix  
    forestillet.

Voici le Temps  
    dépouillé  
saisi, ramené  
    de firmament;  
D'Hélios  
    le fidèle reflet  
par une hélice  
    représenté.

Here is Time  
    in heavenly grace,  
Hither brought  
    from outer space,  
Helios  
    uncomplicated  
In a Helix  
    concentrated.

Piet Hein

Born in Copenhagen in 1905, he followed several courses of education in such fields as philosophy, mathematics and art - building up a broad -ranging knowledge. His big breakthrough came as a writer for the Politiken newspaper, where from 1940 to around 1960, a grook - i.e. a short verse in rhyme invented by Piet Hein - appeared every day. His grooks have been translated to many different languages and have been published in book form. He applied his mathematical knowledge at the Niels Bohr Institute, where he collaborated with Niels Bohr. When Stockholm was to have a new city centre, Piet Hein was consulted and the Super Ellipse saw the light of day at Sergels Square. Subsequently, the super ellipse has been a recurring theme in many of Piet Hein's designs, such as super ellipse tables, porcelain, trays and fittings.

Instructions for setting up your sundial.

1. Fasten the base plate by inserting the Allen bolt (a) through the base plate (b) through the length of tube (c) and into the narrowest tube (d). Then gently tighten the bolt. Now lift up the sundial carefully.
2. Mark the base/the ground or find bearing points in the surroundings that point to the south ( $180^\circ$ ).
3. Now place the semicircular piece in a vertical position so the end of the spiral with the screw is at the bottom. Gently tighten the spiral by tightening the bolt at the top of the upright. Position the sundial so the opening of the semicircle is pointing south.
4. Now incline the spiral so that it is parallel to the earth's north-south axis. This can either be done in a practical or a theoretical manner:

#### PRACTICAL

On a sunny day at 11 am, 12 noon or 1 pm loosen the Allen bolt at the top of the stand and turn the semicircular piece backwards and forwards until the light/shadow line cuts the correct time marking.

REMEMBER that the "screw" end of the spiral must be at the bottom!!

#### THEORETICAL

The length of the spiral is 80 cm = The internal diameter of the semicircle. The inside circumference of the whole circle ( $360^\circ$ ) must therefore be  $\pi (3.14) * 80 \text{ cm} = 251.2 \text{ cm}$ .

Therefore,  $1^\circ$  corresponds to:  $251.2 \text{ cm} / 360^\circ = 0.697 \text{ cm}$ .

The marking should be set: "closest whole degree of latitude" \* 0.697 cm.

#### EXAMPLE

Odense is situated at latitude  $55^\circ 22'$  north. In order to place the sundial at locations with the same northern latitude as Odense, position the semicircle as follows:  $55^\circ * 0.697 \text{ cm}/^\circ = 38.335 \text{ cm}$ .

Then measure 38.335 cm off from the spiral's fastening point towards the inner side of the semicircle and mark off the point. The spiral can now be fixed when the Allen bolt at the top of the stand is tightened down to this mark.

Regardless of the method you choose, the stand must be vertical!

Correcting for summertime:

This is done by using an Allen key to loosen (but not remove) the bolt in the end of the semicircle where there are two small holes in the pipe. When the little white screw in the spiral is free of the hole in the semicircle, the spiral should be turned until the screw is next to the next hole. Now retighten the bolt in the semicircle.

This sundial spiral is made for the northern hemisphere (counter-clockwise)

This sundial spiral is made for the southern hemisphere (clockwise)

To find out more about Piet Hein take a look at: [www.piethein.com](http://www.piethein.com)

