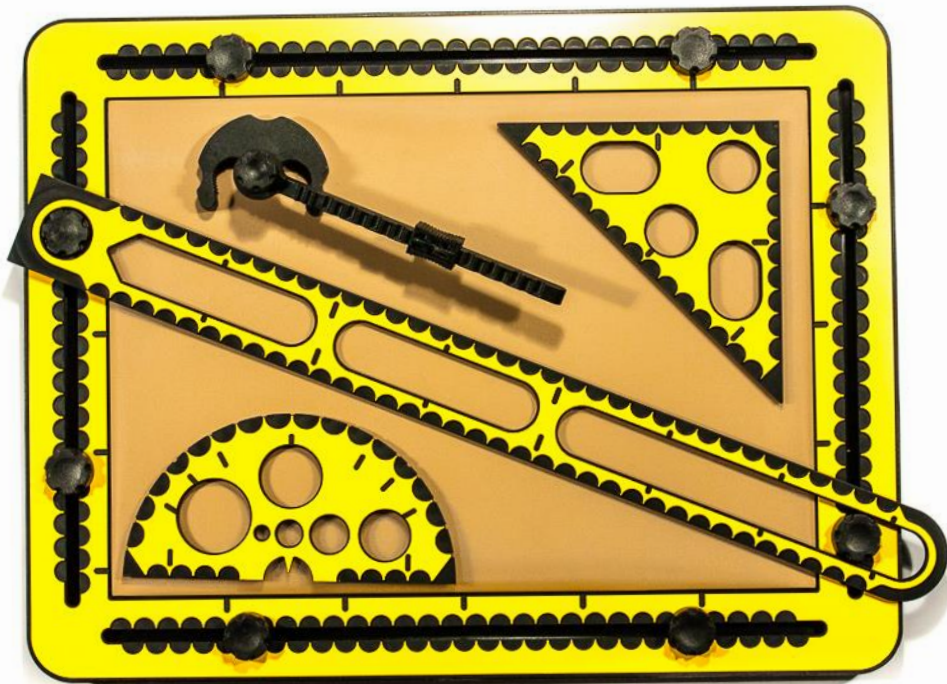




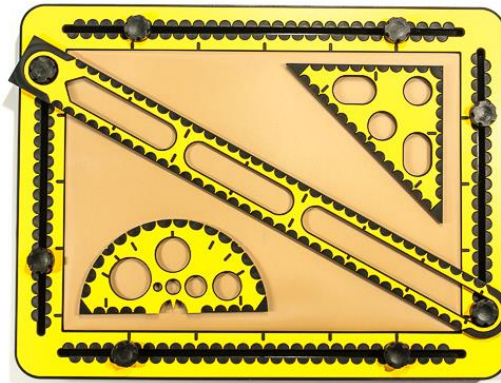
TactiPad manual



English

TactiPad drawing board - manual

Until you have the TactiPad in front of you, and the drawing tools in your hand, you will not really know what the TactiPad feels and looks like. Of course, holding it is not always possible, which is what this detailed description of all its parts is for.



All parts of the TactiPad

Definition of the TactiPad

The TactiPad is a drawing board which can be used by a Visually Impaired Person (VIP) to make raised line drawings, or by others to make raised line drawings for the VIP. The drawing happens on a thin plastic sheet placed on a rubber surface.

Working with the TactiPad

When firmly pressing the sheet with either a pen or any other pointy device, a raised line will develop. This is a very old technique, which makes use of the so-called 'emboss'-effect, meaning the plastic sheet will be stretched by the tip of the pen. These transformations can not be undone. In other words: don't bother bringing your eraser.



Drawing a tactile line with a ballpoint

General characteristics

The TactiPad is made of plastic, so that it will not feel cold. The corners are rounded. The size, as well as the length markings, are based on commonly used values. The use of the black and yellow colors provides a good contrast between the different parts of the TactiPad. Being flat, it is easily transportable. Two grooves have been made at the backside, which make it possible to hang the TactiPad like a picture frame.



Using the grooves at the backside, the TactiPad can be hung like a picture frame

Drawing surface of the TactiPad

The surface on which users can make their drawings, has exactly the size of an A4 paper sheet (29.7 x 21.0 centimeters). It is made up out of a 4 millimeter thick layer of rubber. Below this layer is a thin metal plate. There is a 3.5 centimeters wide frame around the drawing surface, in which a groove and centimeter markings are placed.



The opened frame

At the front side of the TactiPad, there is a wide indentation in the middle of the front edge (as can be seen in the picture next to this). When the frame is closed, you can hook your thumb underneath the frame at this center point and open the frame by pushing it up with

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your thumb, while simultaneously pressing down on the drawing area with your other fingers. When closed, the frame fits exactly around the drawing surface and is the same height, meaning you have one smooth surface. The plastic sheet which is used for drawing is 34 by 27 centimeters. Because the sheet of foil is larger than the drawing surface, the frame will help hold it in place when it is closed. Magnets in the corners of the TactiPad ensure that the frame stays closed, holding the foil securely in place.

Placing the drawing foil

There is a hinge on one of the long sides of the frame, to make the frame fall exactly into place. When the frame is opened, a sheet of drawing foil can be placed. It is not necessary for the sheet to be perfectly straight to fit underneath the frame, as long as it covers the drawing area. It is, however, important to make sure the sheet is as smooth as possible before closing the frame. The easiest way to smooth it out is by moving both hands from the middle outward while pressing down on the sheet and letting the frame rest on your hands. This way as soon as you remove your hands, the frame will fall into place, securing the smoothed sheet in its position.



Placing the sheet on the drawing surface

The frame

Grooves have been made in each of the four sides of the frame. Each of these grooves has two moveable buttons, to which the drawing tools can be attached. Measurements can be found all around the frame. There are short indentations directly next to the drawing surface, which indicate distances of 5 centimeters. The inside of the grooves in each of the four sides of the frame indicates distances of 1 centimeter, while the outer side of the grooves indicates distances of 0.5 centimeters.

The starting point for these measurements is in the upper left corner of the frame (with the hinge of the frame either at the back or at the left side).

The edge of the frame is 3.5 centimeters wide. The diameter of the buttons measures 2 centimeters, and they are placed 1 centimeter away from the outer edge of the frame.



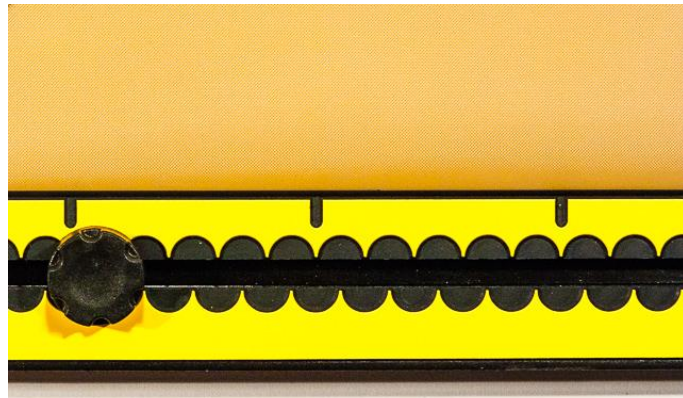
By smoothing out the plastic sheet wrinkles disappear



A corner of the frame with the buttons and centimeter markings

Length markings

For the measurements per centimeter, 9 millimeter-wide semi-circular hollows can be found close to the edge of the drawing area. They make it possible for the user to read measurements per centimeter by using the point where two of these hollows connect, each of these points indicating one centimeter. Because



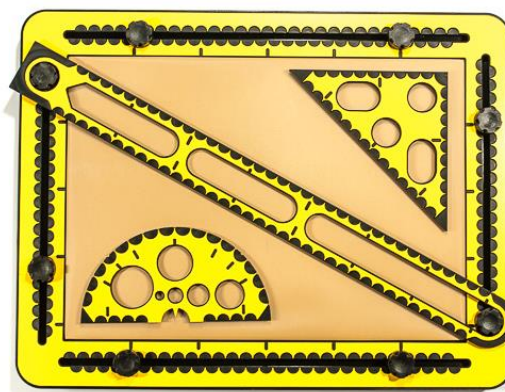
Centimeter markings at the edges of the board

of their semi-circular shape, measurements of 0.5 centimeter can also be read with the help of the semi-circles on the outer side of the frame. The points where those hollows connect indicate a 0.5 centimeter distance from the nearest point on the inside of the frame (the ones indicating centimeters). The measurements can be found on all sides of the drawing area, as well as on the drawing tools.

An exception is the round edge of the protractor. For measurements, it also uses semi-circular hollows. However, the points between the hollows do not indicate a 1 centimeter distance, but instead they indicate the angle in steps of 10 degrees.

Drawing tools

For drawing straight lines or certain angles, a ruler, a triangle and a protractor are provided. The ones included with the TactiPad are specially designed with 2 centimeter wide holes and grooves to fit over the buttons on the frame. The drawing tools are made with a rubber underside, which prevents them from slipping on the slippery drawing surface.



The drawing tools (ruler, triangle and protractor) on the TactiPad

Buttons and holes

Black ribbed buttons can be moved through the grooves by (un)screwing them. The buttons are 2 centimeters wide and 8 millimeters high. They can be removed by completely unscrewing them. To place a button back in the groove, place it on a random position in the groove, and slide it all the way to the outer corner, dragging the nut at the bottom of the groove along. Here, the button can be inserted again.



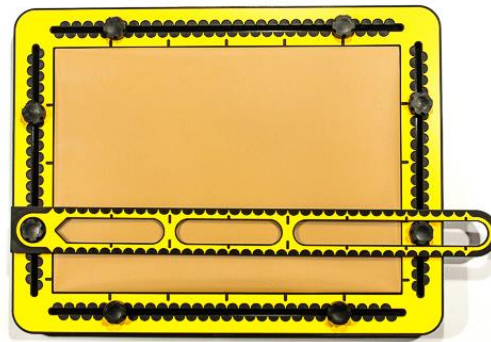
Move the nut to the outer corner of the groove to screw the button back in

The drawing tools have holes and wide grooves, to fit around the buttons. By first fixing the button in place and putting the tool over it, the tools can be attached. With partially unscrewed buttons, the tools can be moved smoothly across the drawing surface

The ruler

The ruler is 4 centimeters wide and 43 centimeters long. With this length, it can cover the entire drawing surface, even diagonally.

One of the ends of the ruler has a 2 cm wide round hole. 2 cm wide grooves run along the length of the ruler. By placing the grooves and round hole over the buttons, the ruler can be fixated in any direction across the drawing surface.



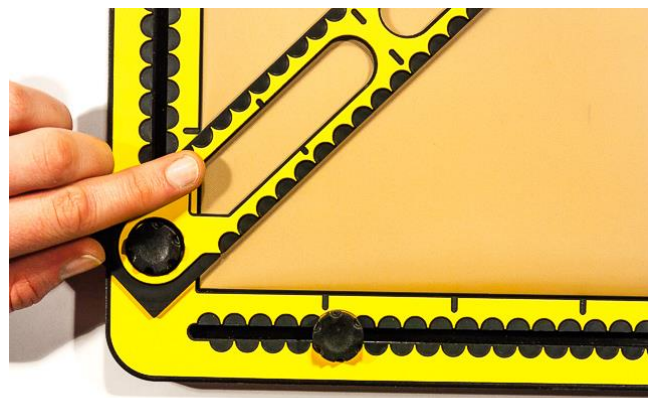
Using the round hole and grooves, the ruler can be fixated around the buttons

There are two breaks in the groove: for solidity and as recognizable points, two little 'bridges' have been made across the groove, each at a distance of 10 centimeters, starting from the

square end of the ruler.

Indentations mark distances of 5 centimeters. Centimeters are marked on both sides, along a length of 35 centimeters.

By placing the ruler horizontally or vertically, perpendicular to the edges of the drawing board, the centimeter markings start exactly at the edge of the drawing surface. The square end of the ruler can be used to align the ruler horizontally or vertically. Alternatively, the ruler can be positioned in a 45 degree angle by matching a side of the pointed end of the groove to the edge of the drawing surface. For drawing a line at a precise position, take into account that the edge of the ruler is 1 centimeter wide.

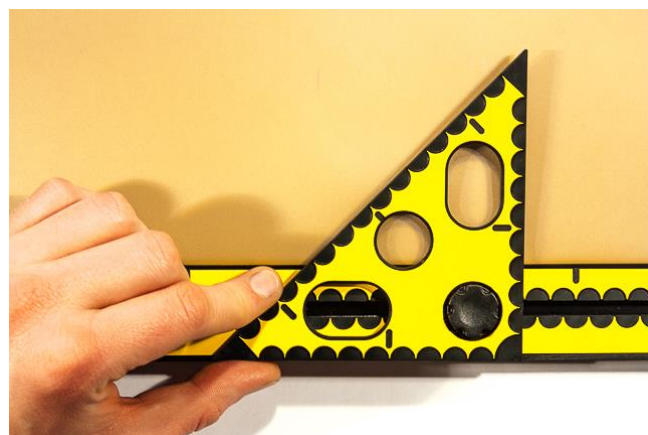


Use the square end of the ruler to position it perpendicular to the edge or under a 45 degree angle

The triangle

The 45-degree triangle has the same length markings as the drawing board. The two short sides are 10 centimeters long, while the long side measures 14 centimeters. An indentation on the middle of the long side makes it easy to draw a perpendicular line.

There are four holes in the triangle to help fix it on the buttons. The round hole in the 90 degree corner fits around a button. By aligning one of the short sides of the triangle with the edge of the frame, the triangle creates two angles on the board, one of exactly 90 and one of exactly 45 degrees.



By aligning the short side with the frame, the triangle makes a 45 and 90 degrees angle

There is a round hole a distance of 1 centimeter from the edge, in the middle of the long side of the triangle. To the left and right of it are two oblong holes. When placing both the middle hole and one of the others over a button, an angle of 30 or 60 degrees can be made by turning the triangle to its limit.



Using the oblong holes, 30 and 60 degree angles can be made

Protractor

The protractor is semi-circular with a 7 centimeter radius. A point in the centre of the half-circle in the middle of the straight side indicates the central point of the protractor. Along the round side, there are semi-circular markings per ten degrees. Small notches at the positions of these markings can be used for precise placement of the pen. Little slots on the top surface indicate the 30, 45, 60 and 90 degree angles.

There are round holes in the middle of the protractor, which are used as templates to easily draw circles with a diameter of 0.5, 1, 1.5, 2 and 2.5 centimeters.



The point in the middle of the straight side indicates the centre of the protractor

Compass

The compass consists of two parts. The first is the compass arm with a rounded spike around which it turns and an adjustable point for drawing the circles. The other is the base which holds the spike of the compass arm. Three magnets in the compass base keep the compass in place, using the metal layer below the drawing surface.

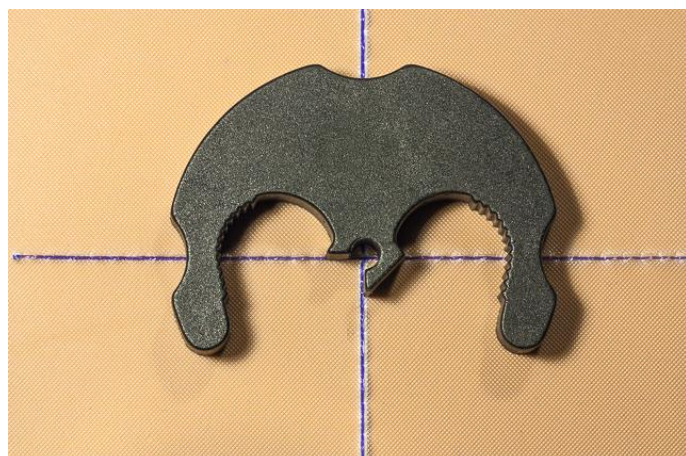
The base consists of a half-circle with a diameter of almost 6 centimeters, with three little legs pointing out, making it look slightly like a rounded capital letter 'E'. The middle leg has the shape of a triangular arrowhead, of which one corner has been cut out. The arrowhead can be used to precisely place the middle of a circle on a specific point in the drawing. By placing the corners of the arrowhead on two crossing lines, the centre of the circle will align exactly with the intersection of the lines. Along the outer edge of the base, three semi-circular cutouts have been placed, which can be used to quickly and precisely align the compass.



The two parts of the compass: the magnetic base and the arm



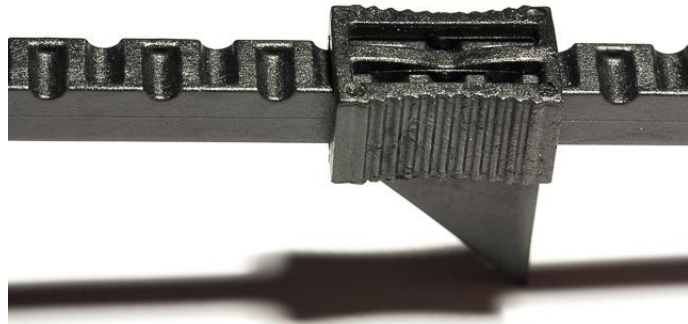
The base keeps the compass in place on the drawing surface



The base placed on two crossing lines

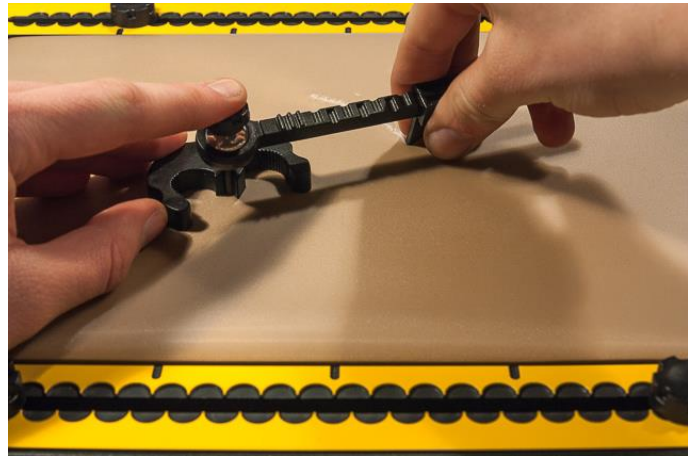
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The adjustable point which is used to draw the circles moves across an arm with centimeter markings. Using these markings, the radius can be set per 0.5 centimeters. The smallest possible radius is 3 centimeters, whilst the largest is 12 centimeters.



Centimeter markings on the compass arm

To draw a circle, place a finger on the base and with your other hand hold the point and turn it clockwise or counterclockwise around the base. By tilting the arm and slightly pressing down on the foil, it becomes easier to draw a circle on the foil with the compass point.



Hold the point in hand while drawing a circle

At the outer end there is a compass spike which is placed in the base, to form the centre of the circle you are drawing. At its bottom are three very small notches. By pressing down and turning the compass spike, without moving the compass arm along and using the small rod on top, these notches create a small tactile circle, indicating the middle of the drawn circle.



Using the smaller spikes, the center of the circle can be drawn

Sticking pins in the board

The rubber layer of the drawing surface is 4 millimeters thick, which means that pins can be stuck into the surface. Pins can be used for precisely positioning the drawing tools, or to mark a specific point on a line which could otherwise be covered by a drawing tool.



Pins are used to position a drawing tool, or to mark a certain point on a line

Magnets in the sides

Two small magnets have been placed along three of the sides of the framework. These magnets ensure that the holder for the receiver of the TactileView digital pen can be placed along these edges and positioned on the drawing surface.

These magnets ensure that the receiver is automatically positioned correctly. In combination with the TactileView drawing and production software, the drawings can be digitalised and audio information can be explored.



Magnets in the sides, for holding the receiver for the TactileView digital pen

Store everything

The TactiPad and all its parts can be stored in a case with a handle and a shoulder strap. A special compartment is present for storing the plastic sheets. This compartment is closed with a velcro strap, preventing the sheets from moving during transport. The compartment for the sheets is situated underneath the frame to which the ruler, triangle and protractor are attached with rubber bands. The same rubber bands also keep the compass base in place, as well as the holder for the receiver of the TactileView digital pen. The compass arm, a pen and possibly the digital pen are placed in a small compartment. The compass arm should be placed with its point and spike flat in the case, making sure it does not stick out. There is also a pincushion, holding a number of pins. The drawing board itself goes into another compartment, which consists of a frame which covers the grooves with the buttons, but leaves the drawing surface uncovered. When the case is folded inwards, a velcro band keeps it closed. The drawing surface remains uncovered when the case is folded outwards so that, when the case is carried with the shoulder strap, you can draw while traveling.



The Tactipad, the tools and the sheets stored in the case



With the case folded outwards you can draw while traveling

For more information, pictures and videos visit www.TactiPad.nl



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