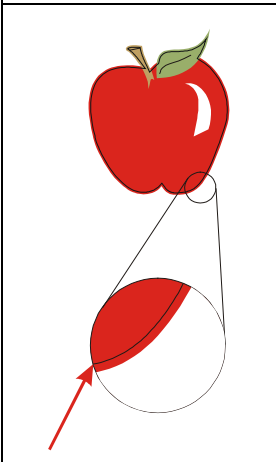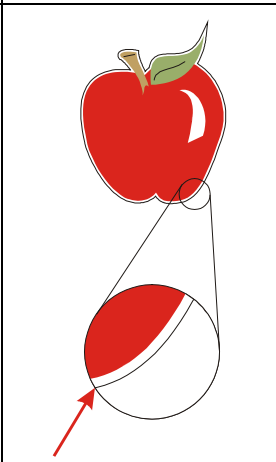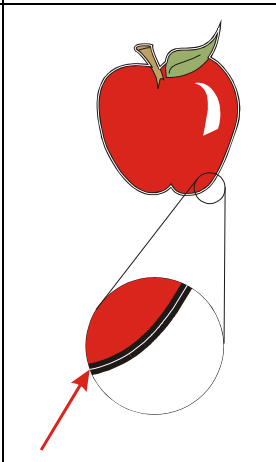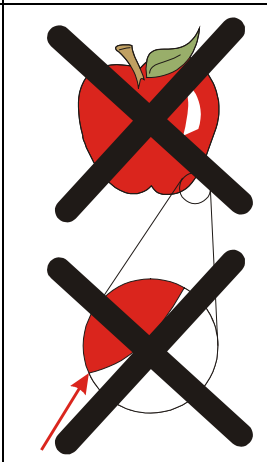# Manually creating a print with OPOS markers

## 1 Creating the graphic with the markers

1. Create the graphic and contour cut line(s). For easier handling, place the print data, contour line(s) and OPOS mark data on separate layers, e.g.:

    i. Print Data: Containing the image that needs to be printed

    ii. Kiss-cut: Containing the cut contour data that needs to be cut (not printed)

    iii. Regmark: Containing the Regmark OPOS data, this layer needs to be printed and will also be used for cutting

> **NOTE:** Do not place contour lines along the edges of graphics or the slightest movement in the media may result in an unsatisfactory cut. Instead, practice one of the following techniques:

➢ Place contour lines just inside the graphics (recommended) (1).

➢ Place contour lines outside the graphics (2).

➢ Create thick borders around graphics and place contour lines inside these borders (3).

(1) contour line inside graphic recommended	(2) contour line outside graphic	(3) contour line inside a thick border	Contour line on edge of graphic

2. If necessary, make additional copies of both the graphic and its associated contour.
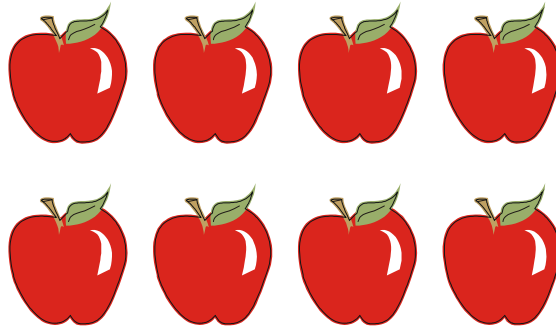
3. Insert a marker to represent the Origin. The marker must be a black square. Each of the marker's four sides should measure 2mm but must not be less than 1.5mm or more than 10mm. (1=X-size 2=Y-size.)
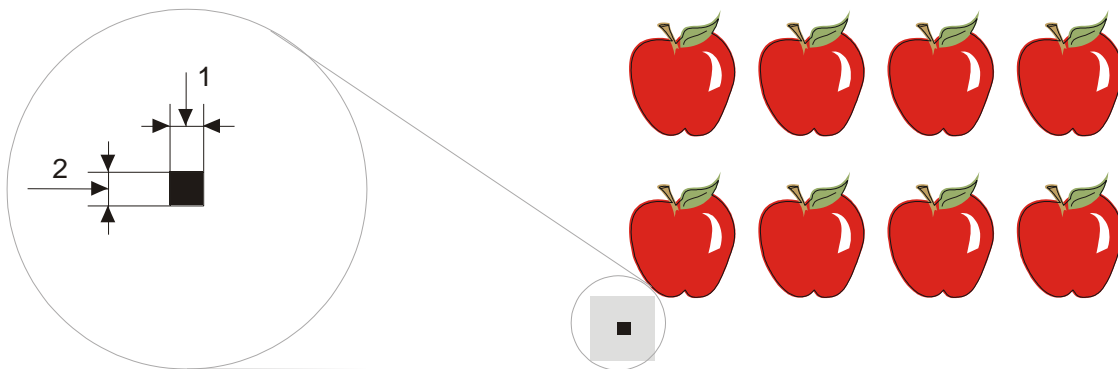
4. Set the line style of the marker to **None**. Line styles of varying thickness can alter the size of the markers. Make sure there is a white margin of about 3 to 4 times the marker size around the marker (in the above picture this area is represented by a gray area). If anything is printed within this margin, the sensor may be unable to locate the marker.

5. Make sure that the Origin marker is situated below and to the left of all contours to be cut.

6. Insert horizontally aligned copies of the Origin marker at regular intervals (X-Distance). Together, these markers indicate the X-Axis.

The X-Distance (1) is the distance from the lower left corner of one marker to the lower left corner of the next marker and depends on several factors. *The X-Distance must be known when setting the OPOS parameters manually.*
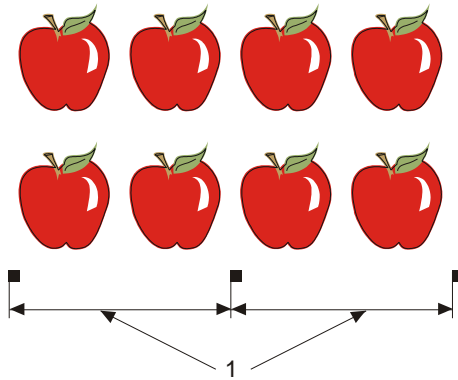
> **NOTE:** OPOS will operate faster as the X-Distance increases. Conversely, OPOS will operate more accurately as the X-Distance decreases; however, the impact on accuracy is minimal. Recommended distance between the markers is 400mm. Maximum X-Distance is 1300mm.

7. Make sure there is enough white space around each marker. The X-Distance should be decreased if the margin of white space around the marker is not 3 to 4 times larger than the marker itself.

8. Make sure that the markers are perfectly level with one another.

9. Make a copy of the row of markers created in step 5. Place this new row above the graphic to indicate the Y-Axis.

The Y-Distance (2) is the distance from the bottom of one marker to the bottom of the next marker along the Y-Axis. *The Y-Distance must be known when setting the OPOS parameters manually.*
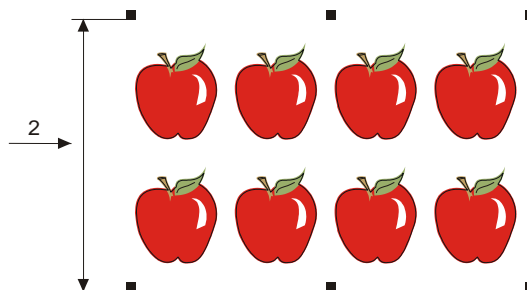
10. Make sure the two rows of markers have not shifted along the X or Y Axes.

11. Check to be sure that graphics, markers and contour are each in a separate layer. Copy the origin marker for origin reference in the layer of the contours.

> **NOTE:** The layer with the graphic and the layer with the markers must be printed out. The layer with the contour lines and the origin reference must be cut out.

> **NOTE:** The optimum marker size depends on the type of printer and the X and Y distance of the markers.
> Inkjet printers with a lot of bleed require slightly larger markers. Some tests will be needed with the printer in question to decide on the right marker size.
> If the X distance is relatively large (> 800mm), then slightly larger markers could be used.

There exists a function in OPOS to compensate for curved printing errors in the Y axis also. This is called OPOS XY. An extra line needs to be printed with the design to be able to use the OPOS XY functionality.
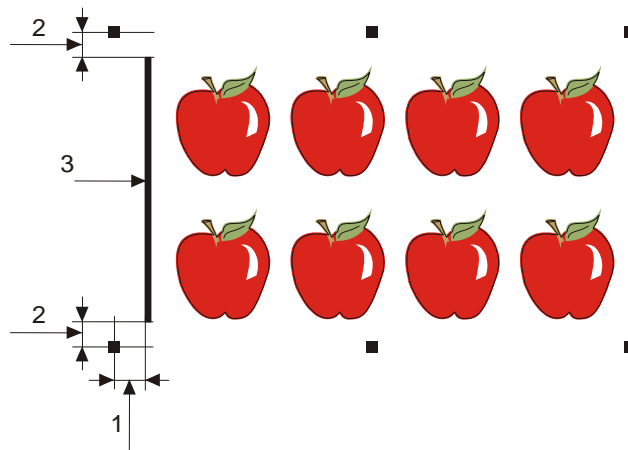
The line may be added between or above the front Y markers. The distance between the center of the markers and the line should not be more than 20mm (distance 1). The left and right margin between line and marker should be 10mm for optimal sensing (distance 2). The line itself should be 1mm thick. It is not necessary to have a white area between the extra line and the rest of the design.

When OPOS XY is enabled, then the OPOS sensor will measure points along the extra line. The number of measuring points will be calculated by the cutter and will depend on the width of the design.

> **NOTE:** The default setting for OPOS is OPOS. If the OPOS XY functionality is needed, then the user must set change the setting 'alignment mode' in the OPOS Setup to OPOS XY by hand on the control panel (see section 4.3.15) or via the cutting software.

> **NOTE:** Some cutting software do not support the OPOS XY feature. If they also send the alignment command 'OPOS' to the cutter, then they block the OPOS XY feature of the cutter. If it is possible to define a line by hand in the design so that it meets up to the specifications above, then the blocking of the software can be neutralized by using the setting: 'FORCE OPOS XY' in the alignment mode.
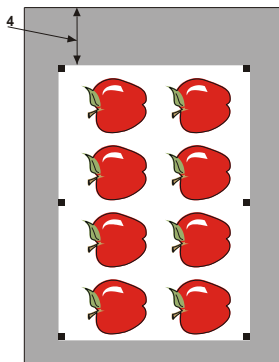
3   Printing the graphic

1. To print the job use the **Print Data** layer and the **Regmark** layer.

2. Print the graphic and its markers with a printer (scale = 100%). When printing on a roll, make sure that the graphic's Origin marker coincides with the media's origin (1).
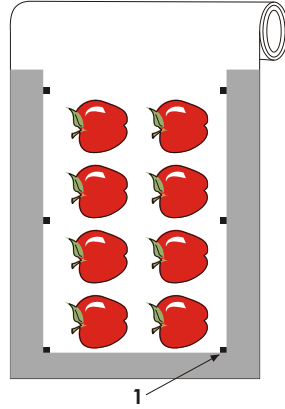
3. Make sure there is *at least* a 1cm (0.4in) margin on each side of the graphic (2). A 2cm (0.8in) margin is preferable. There must also be a front margin of 1 cm (3).
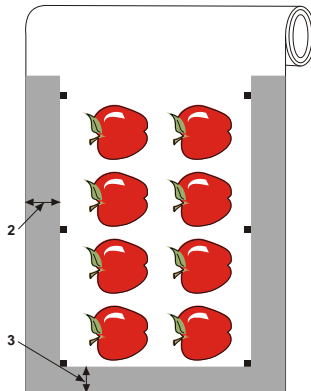
4. Leave a margin of at least 4cm (1.6in) following the print when using sheets or when cutting the print off a roll (4).
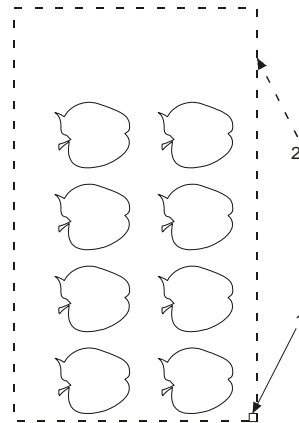
4 Loading the graphic into the cutter

Load the printout into the cutter as described in the user manual. Make sure that the marker indicating the Origin is situated at the bottom right corner of the cutter.

5 Cutting the contour of the printout

1. Make the layer containing the contour lines (Kiss-Cut layer) and the layer with the OPOS data (Regmark layer) is visible. Make sure the print data layer is not visible during the export of the Contour Cut file.

2. Once you are using the cutting software, it may be necessary to collectively rotate the contours and markers so that the Origin marker (1) is situated in the bottom left corner of the cutting area (2) as viewed on the screen. If your cutting software's default orientation is not set to "landscape," the contours and markers will need to be rotated.
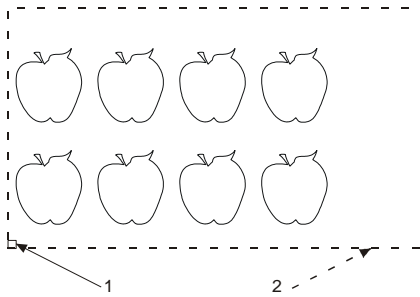
Orientation needed in most cutter software.   Orientation when using WinPlot

3. Make sure that the cutter is connected to the computer and that the cutter is switched on. The cutter's touch screen should indicate that the cutter is ONLINE.

4. Click **Cut** from within the cutting software. The cutter should begin cutting the contour and return to ONLINE status when finished.