Vinyl cutter to T-shirt manual
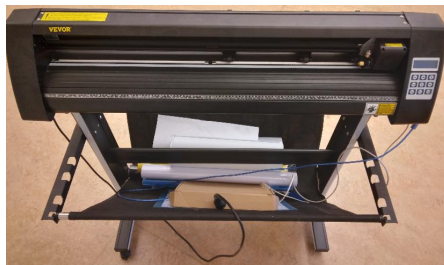
Our Vevor vinyl cutter from the front	Our Vevor vinyl cutter from an isometric perspective

Manual for using the Vevor vinyl cutter to create a T-shirt

Time estimates

- Most time will be spent peeling plastic from the vinyl
- Schedule two hours to produce your first T-shirt with one print
- Schedule 10 minutes to produce your tenth T-shirt with one print, 15 minutes for two print

Procedure

Overview of the procedure

1. Install Inkcut
2. Setup Inkcut
3. Get T-shirts
4. Get vinyl
5. Connect the vinyl cutter
6. Place foil of vinyl cutter
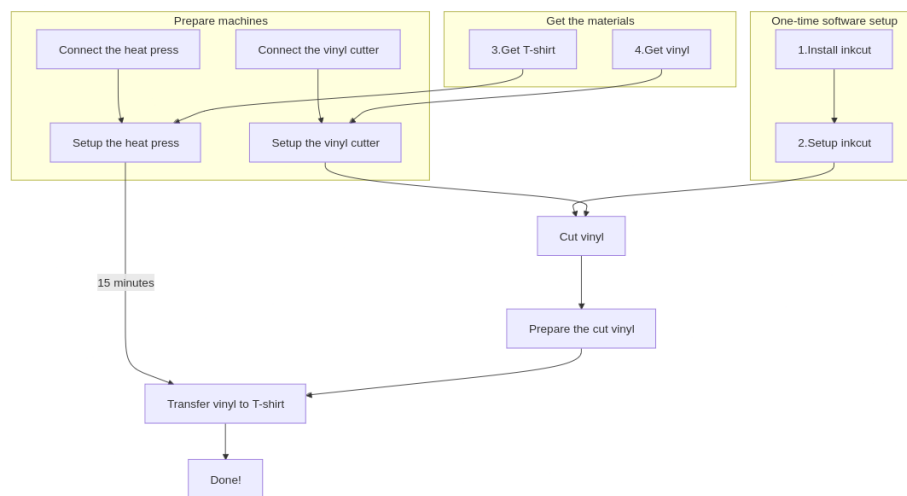7. Set up Inkcut connection
8. Use Inkcut
9. Transfer vinyl to T-shirt

Prepare machines
Connect the heat press
Connect the vinyl cutter
Setup the heat press
Setup the vinyl cutter

Get the materials
3.Get T-shirt
4.Get vinyl

One-time software setup
1.Install inkcut
2.Setup inkcut

Cut vinyl

15 minutes

Prepare the cut vinyl

Transfer vinyl to T-shirt

Done!

Figure 1: Overview of the procedure

1. Install Inkcut

Inkcut is a program to send things to cut to the vinyl cutter. It works under Linux, Mac and Windows. This guide shows how to do this for Linux.

Install the Debian packages:

```
apt-get install python3-pip python3-pyqt5 python3-setuptools
apt-get install libcups2-dev python3-pyqt5.qtsvg
```

Create a (mandatory!) virtual environment for Inkcut:

```
python3 -m venv ~/inkcut_venv
```

Install the Inkcut and PyQt5 Python packages in the virtual environment"

```
~/inkcut_venv/bin/pip install inkcut PyQt5
```

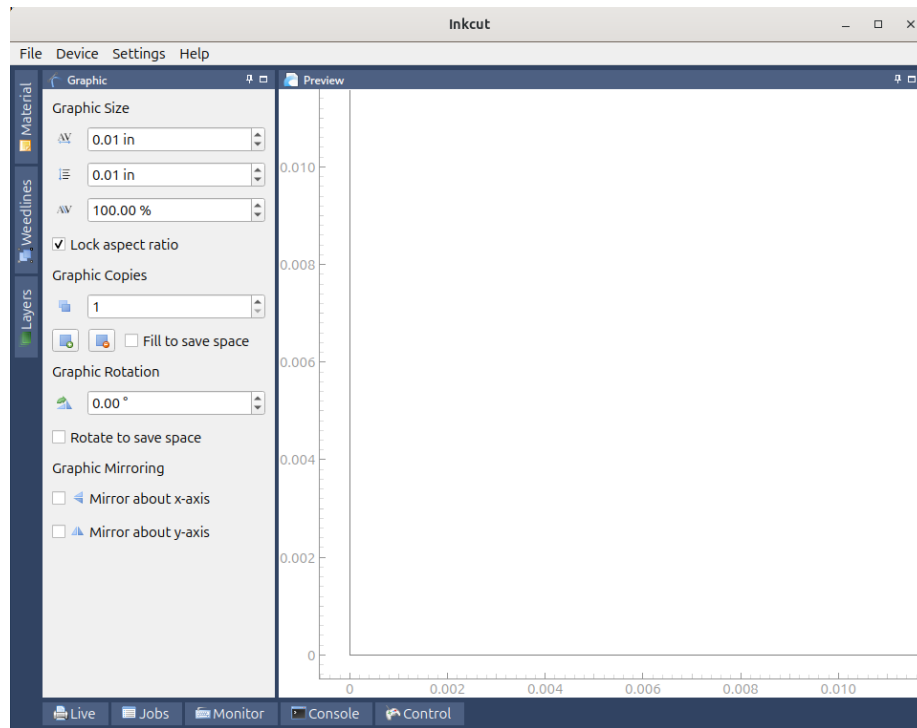Now you can start inkcut with:

```
~/inkcut_venv/bin/inkcut
```


Figure 2: inkcut in action

2. Setup Inkcut

- See Setup Inkcut notes for the notes behind this

Add yourself to the `dialout` group:

```
sudo usermod -a -G dialout "$USER"
```

Restart (yes, a cold boot!).

3. Get T-shirts

Get one or more T-shirts.

Company	Address	Price	Description
Lager 157	Kungsgatan 95	30	Has S, M, L and XL
New Yorker	Marknadsgatan 1	79	?All sizes

- Price is in kroner per (cheapest) T-shirt

4. Get vinyl

Get suitable vinyl

Suitable foil looks like this:

- The foil feels smoother than a sticker ('klistermärke')
- The foil is shinier than a sticker

A good place to vinyl is at https://www.scandraft.se/, where we have bought Siser P.S. Film Easyweed, which works well. You can order longer rolls: we've ordered rolls of 25 meters, for an unknown price (if you know the price, please contribute).
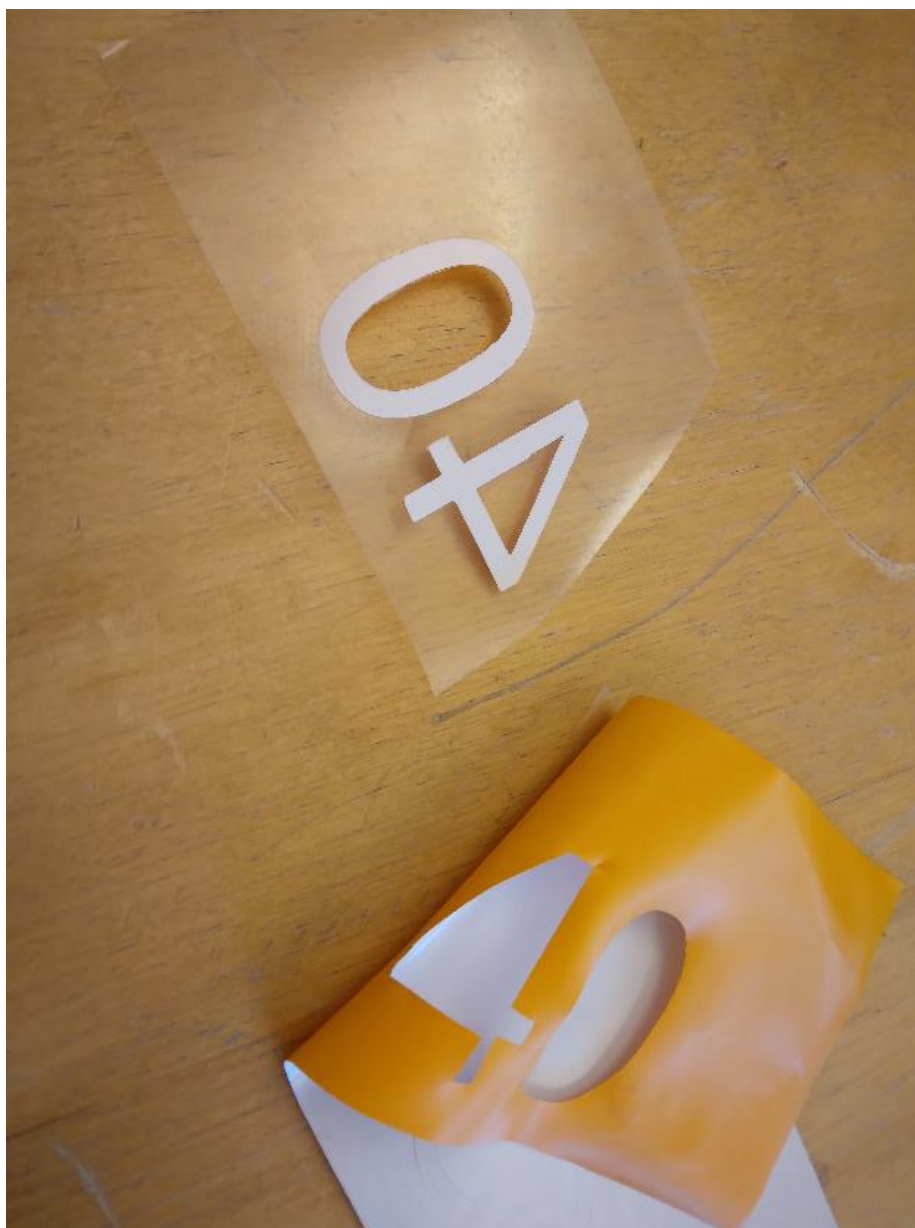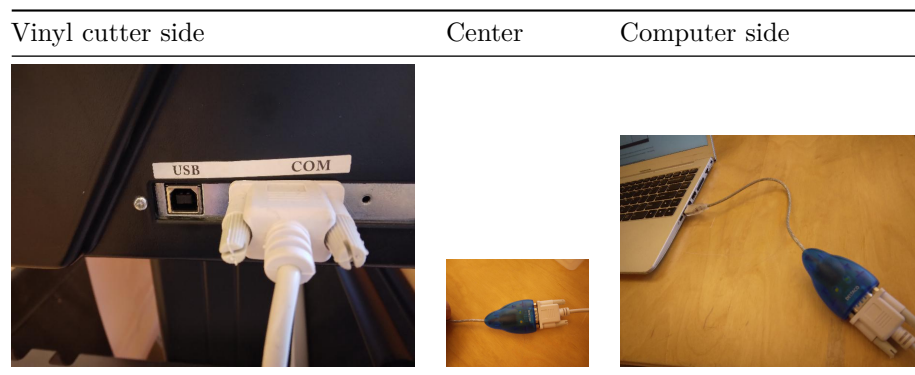
Figure 3: Transfer foil ready for transfer

5. Connect the vinyl cutter

Plug in the correct USB cable from the vinyl cutter to your computer:

Vinyl cutter side	Center	Computer side

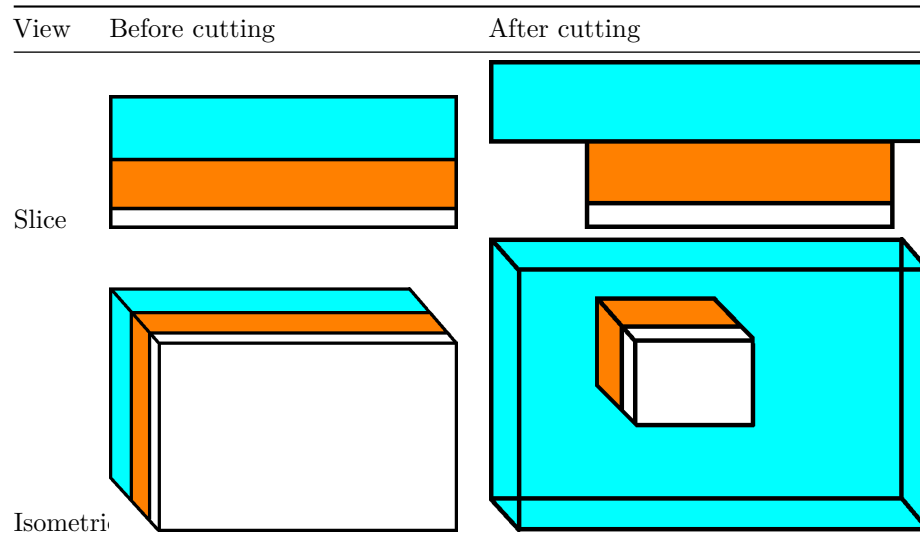

6. Setup the vinyl cutter

The vinyl cutter has three parameters:

- Origin: the bottom-left of the cut, move the red dot to the bottom-left of the vinyl
- Speed: the speed of the blade
    - If the speed is too high, no idea what happens. Please contribute if you know!
    - If the speed is too low, the process takes needlessly longer
- Force: how much force the blade applies to the vinyl
    - If the force is too high, the cutter will go through the vinyl
    - If the force is too low, the vinyl cannot be removed easily

Vinyl	Speed (mm/s)	Force(g)	Recommendation source
Siser P.S. Film	20	120	Trying out, works!
Siser P.S. Film	300	60	manual

7. Place foil of vinyl cutter

Place the foil on the vinyl cutter, with the white side up.

View	Before cutting	After cutting
Slice		
Isometric		

Structure of the foil and what will be cut away. Light-blue: thick, transparent layer, do not cut, can be separated from orange layer by hand. Orange: the color of the print. White: the glue connecting the print to the T-shirt

The knife cuts the white and colored layer only. The thick and transparent layer needs to remain intact.

8. Set up Inkcut connection

Go to the 'Configure device | Connection':

- Type: Serial port
- Port: `ttyUSB0`. If you cannot select `ttyUSB0`, you've used the wrong USB cable coming out of the vinyl cutter :-)
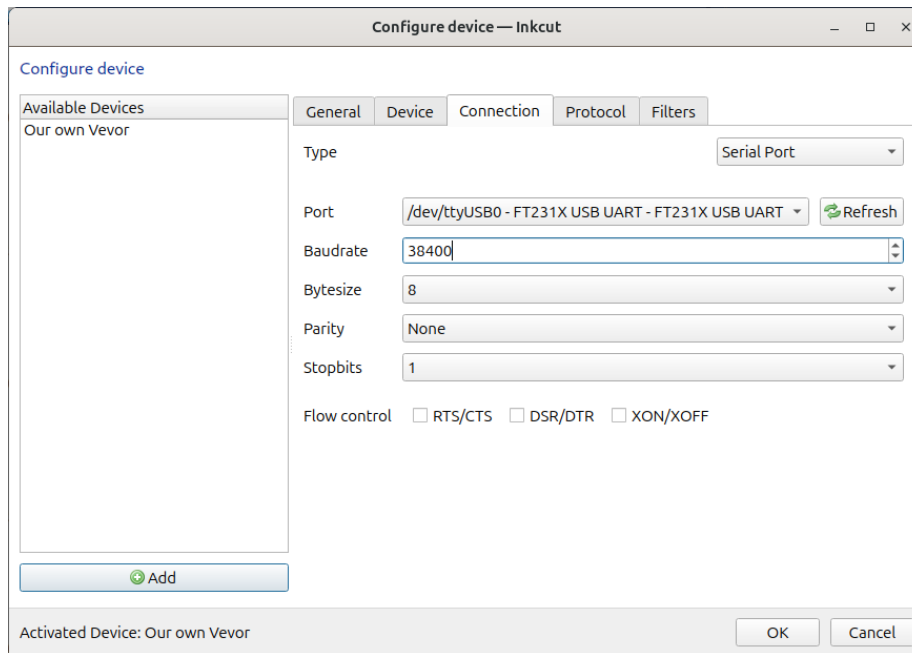- Baudrate: 38400

Figure 4: Use the serial port with a baudrate of 38400

Use the serial port with a baudrate of 38400. If you cannot select `ttyUSB0`, you've used the wrong USB cable coming out of the vinyl cutter
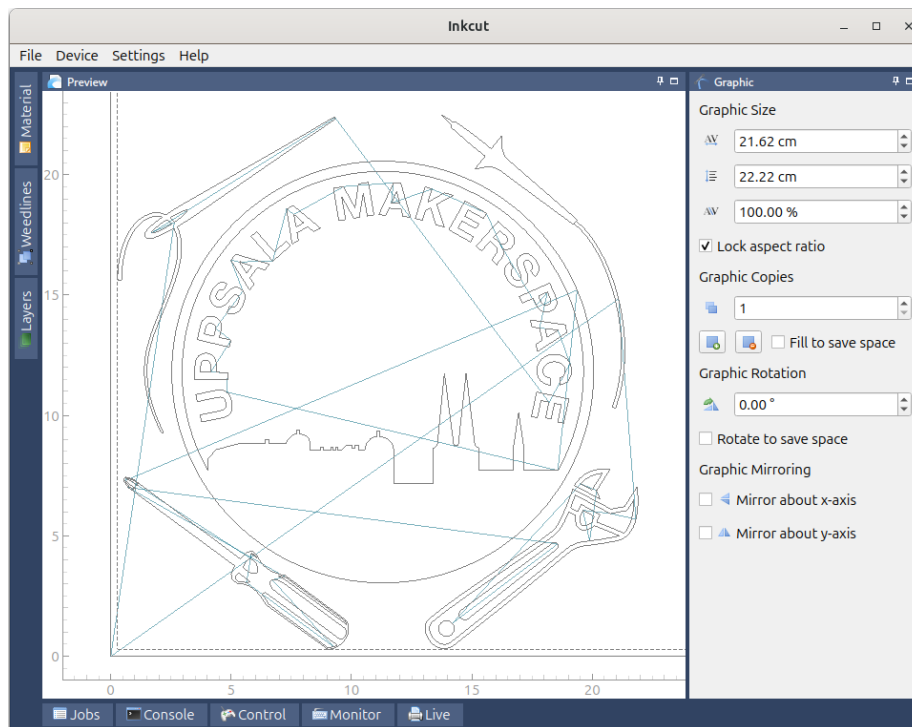
9. Use Inkcut

Load an SVG.

Figure 5: Inkcut in action

Fig 5. Inkcut in action

Fig 6. Don't forget to mirror letters! The letters should be mirrored horizontally. Cutting letters like this will fail.

Fig 7. Don't do two copies like this, this is wasteful.

Fig 8. Do many copies like this: this is not wasteful

10. Setup heat press

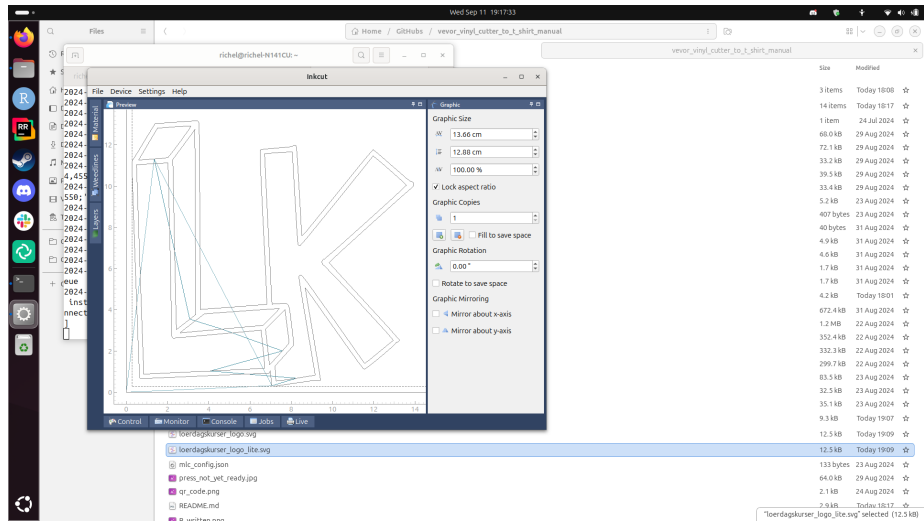| Vinyl	Temperature (C)	Time (s)	Recommendation source
Siser P.S. Film	180	10	Trying out, works!
Siser P.S. Film	150	15	manual

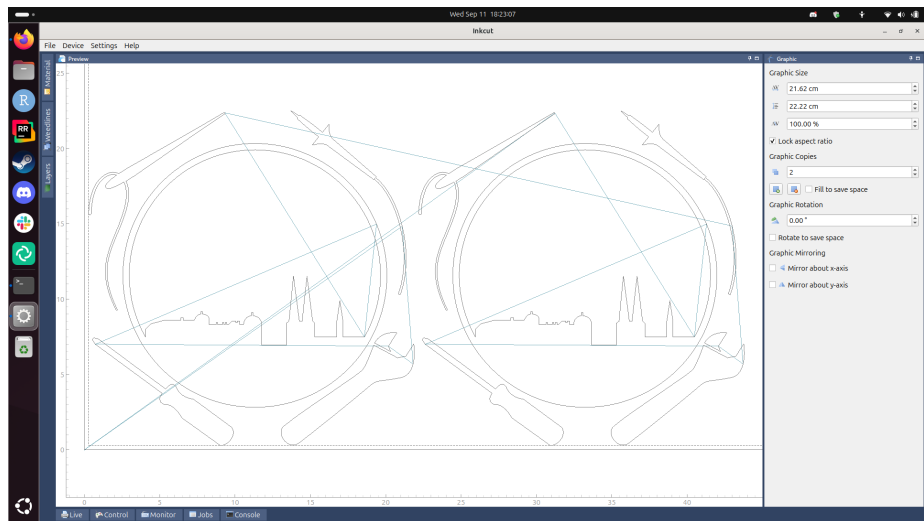Figure 6: Don't forget to mirror letters

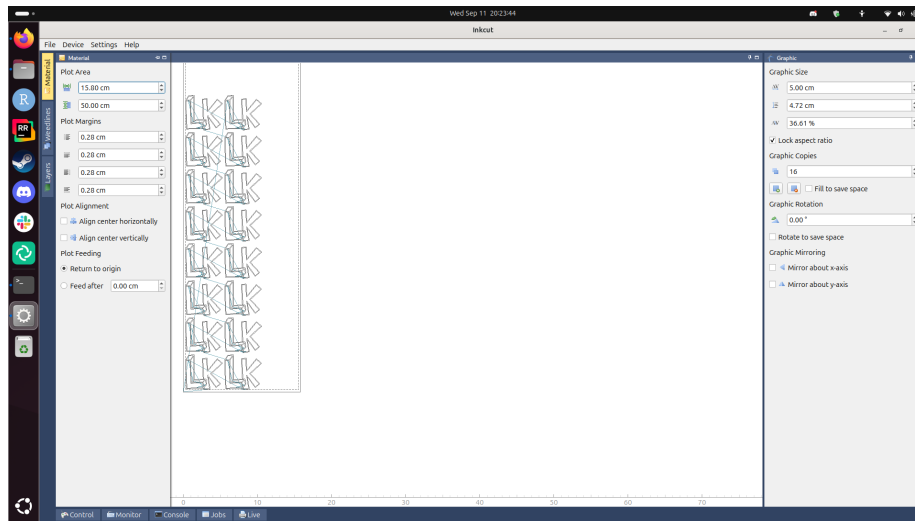Figure 7: Don't do two copies like this

Figure 8: Do many copies like this

11. Transfer vinyl to T-shirt

Put the remainder of the foil on the T-shirt, with the colorful side up.

> Press not yet ready. It should say `T=160/160C`. A temperature from
> 155 to 165 degrees Celcius would also be fine.

Heat up the heat press, this takes about 15 minutes.

Place the T-shirt under the press, with the foil at the right spot.

When the heat press is warmed up, lower the press. After around 20 seconds,
the press will start to beep. Raise the press again.

Wait for the print to cool off.

Carefully peel off the transparent layer from the shirt.

Done!

Figure 9: Press not yet ready

Figure 10: T-shirts that are done

Troubleshooting

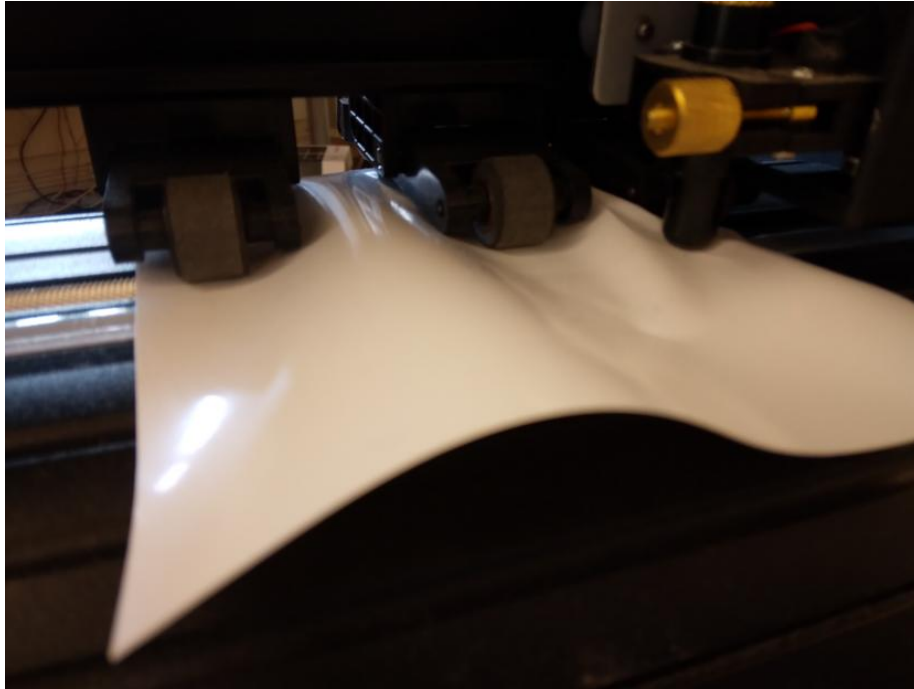### The vinyl cutter is wrinkling the paper

Figure 11: The vinyl cutter is wrinkling the paper

> The vinyl cutter is wrinkling the paper.

This happens when at least one wheel of the three movable heads is not on a roller at the bottom:

> The right wheel (right rectangle) is not on the roller (partially shown and indicated by the left rectangle)

The vinyl cutter is confused

This may happen when you send multiple prints at the same time. Press reset, close Inkcut, press reset, start Inkcut and try again

Figure 12: The right wheel is not on the roller

Figure 13: The vinyl cutter is confused