Package contents:

A: - 1 x perforated plate = **storage plate**

B: - 1 x pre-printed A4 sheet = **marking aid**

C: - 1 x Allen key

D: - 1 x open-end wrench

E: - 100 of screws (short)

Q: - 10 of screws (long)

G: - 150 of nuts (flat design) = **reading nuts**

H: - 100 lock washers

I: -   100 of nuts (standard design) = **end nuts**

J: -   2 of waterproof marker pens (red / black)

Always use a pad (cardboard, for example) to keep the table from being scratched!

Always work in a calm and bright environment so that your words are 100% correct.

Introduction:

When installing a hardware wallet (Ledger Nano S, Ledger Nano X, Trezor One, Trezor T, etc.), a passphrase is generated from 24 English words, which can be used to calculate the private key for each crypto currency.

The system is called bip39 and contains a total of 2048 words. It is structured in such a way that 2 words never have more than 3 identical first letters. This means that each of the 2048 words can be uniquely identified by a maximum of 4 initial letters.
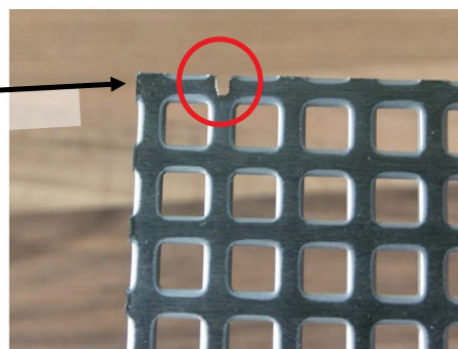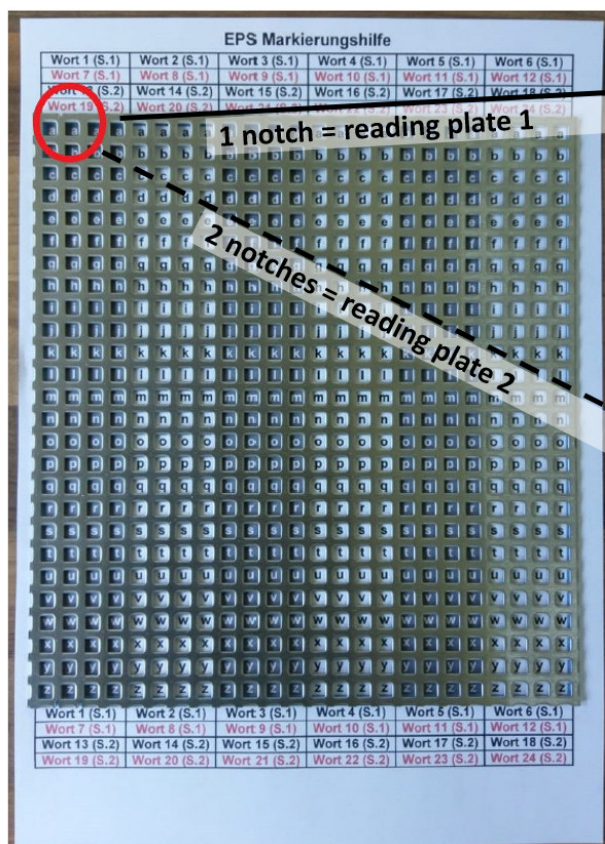
In practice, it looks like that in the Ledger Nano S, for example, you only have to enter a maximum of the first 4 letters to get the correct word displayed (similar to street names in navigation devices).

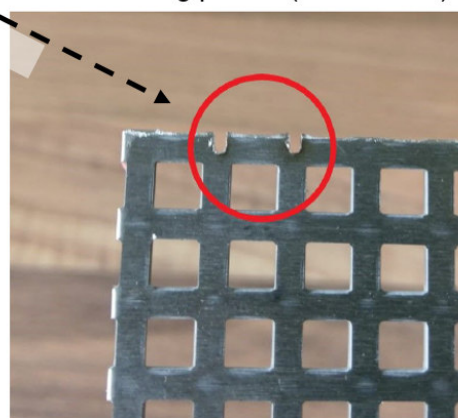It is therefore completely sufficient to only remember the first 4 letters per word.

Operation manual:

Step 1: Align reading page 1 for words 1-12

Pick up the storage disk and place it on the marking aid. You start with the words 1-12, so you have to lay the perforated sheet in that way, so that the corner with the single notch is in the upper left corner (see picture 1). This position of the plate is referred to below as **reading side 1**.
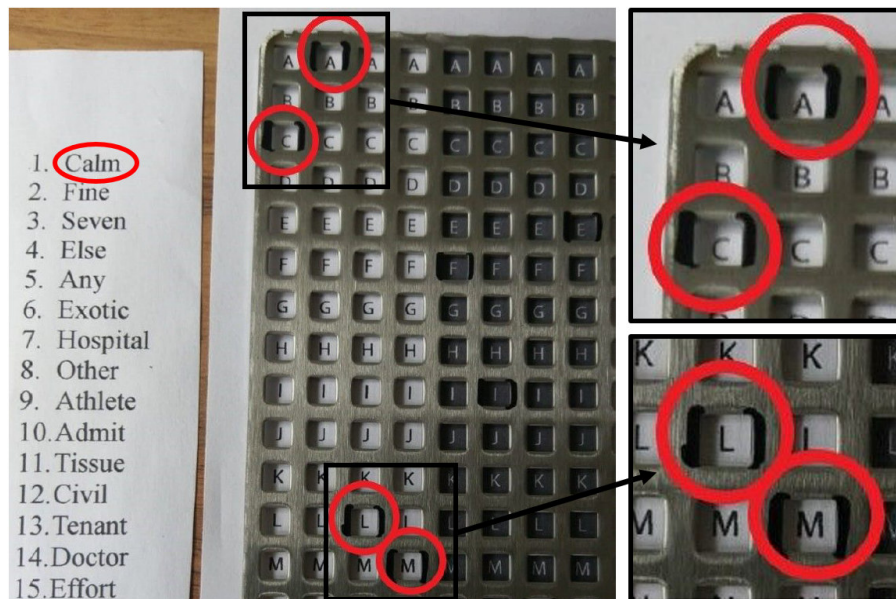

Pic.1: Reading plate 1 (Words 1-12)
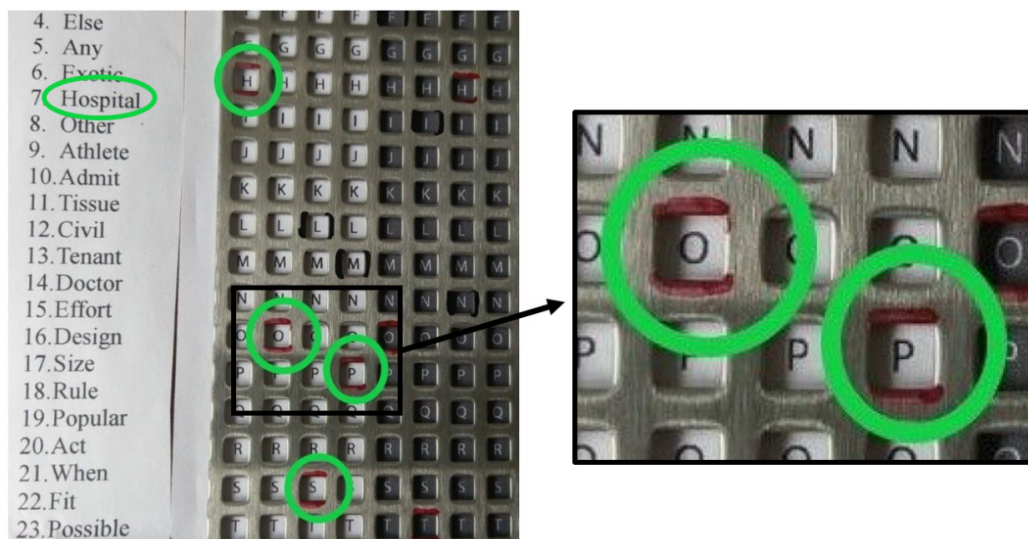
Pic.2: Reading plate 2 (Words 13-24)

Step 2: Black vertical marker for words 1-6

Mark the letters of words 1-6 (from left to right) with black vertical color strokes (only for the first four letters per word). The picture shows this procedure for the first word ("Calm"):

Step 3: Red horizontal markers for the words 7-12

Mark the letters of the words 7-12 (from left to right) with red horizontal color strokes. In the picture you can see that we marked only the first 4 letters for the word "Hospital". As described in the introduction, it is already possible to derive the only possible correct word out of the bip39 word list.

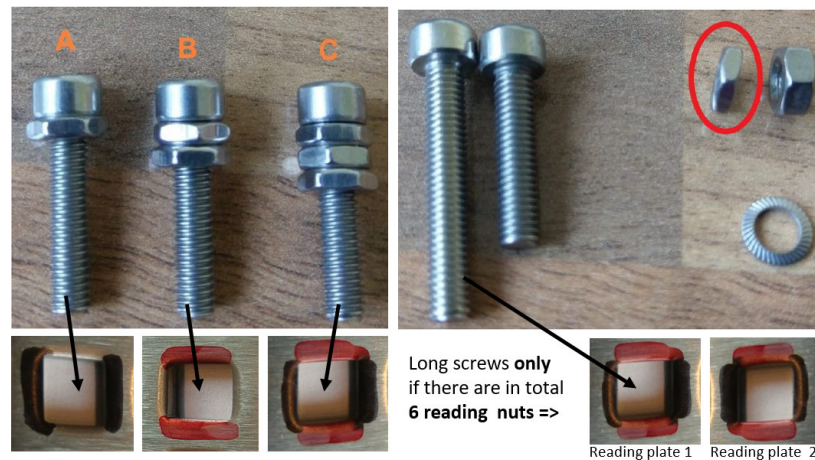## Step 4: Align reading side 2 and mark words 13-24

After you have already marked the first 12 words on reading page 1, you take the back of the current plate for words 13-24 (reading page 2). To do this, turn the plate over once and align it on the marking aid so that the 2 notches are positioned in the top left corner.

Now you can again mark the **words 13-18** from left to right with black vertical color strokes and the **words 19-24** with red horizontal color strokes.

Step 5: Screw the reading nuts together

Now that you've highlighted all 24 words in color strokes, you can now turn them into permanent markers by unscrewing the so-called "reading nuts".

Note: **Only the flat nuts are reading nuts!**

Long screws **only** if there are in total **6 reading nuts =>**

Reading plate 1   Reading plate 2

There are the three variants:

A - 1x flat **reading nut** = black mark

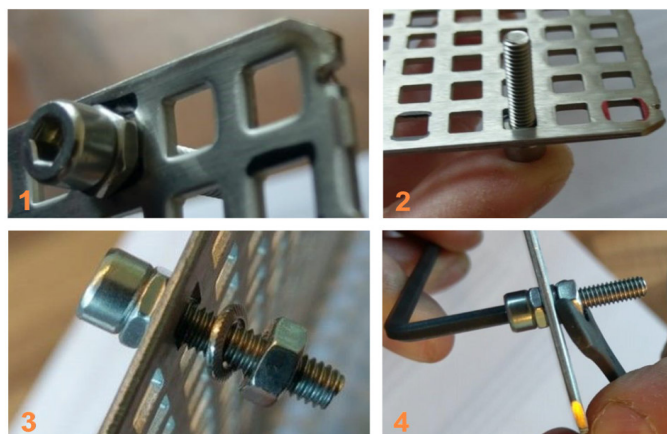**B - 2x** flat **reading nuts** = red mark

C - 3x flat **reading nuts** = black and red marking

ATTENTION: Please also read step 5.2 and the note below!

Step 5.1: Installing the screws

  Take the screws and the reading nuts and screw them together as follows:

  - Turn the corresponding number of reading nuts (1, 2 or 3) onto the shorter or the longer screw (longer one only, if the total will have more than 5 reading nuts) up to the head of the screw.

  - Insert the screw through the marked hole, from the reading side 1 in the direction to reading page 2.

  - Hold the screw with your finger, so that it doesn't fall out and turn the plate upside down to the reading page 2.

  - Check if there is a mark at the point where the screw shows through, if so then turn one, two or three reading nuts onto it (hand-tight)

  - Take a lock washer and put it over the thread.

  - Take an end nut and screw it up until the lock washer is touching the storage plate, or a reading nut (hand-tight).

  –   Take the Allen key and the open-end wrench and turn It tightly (4-5 Nm).

Step 5.2: Screw the reading nuts for reading page 2

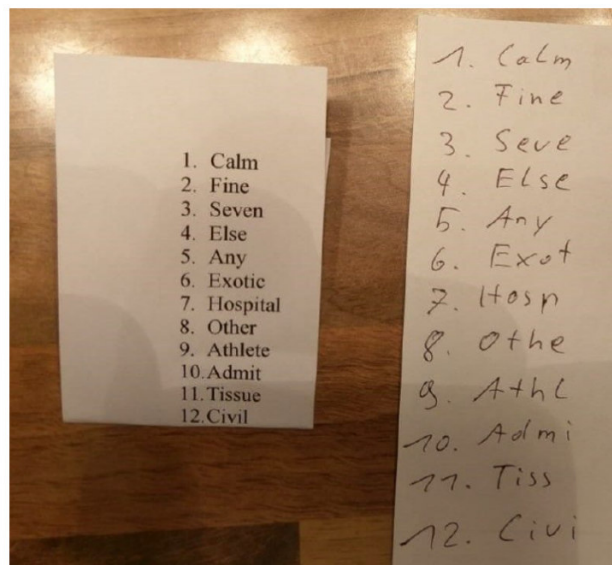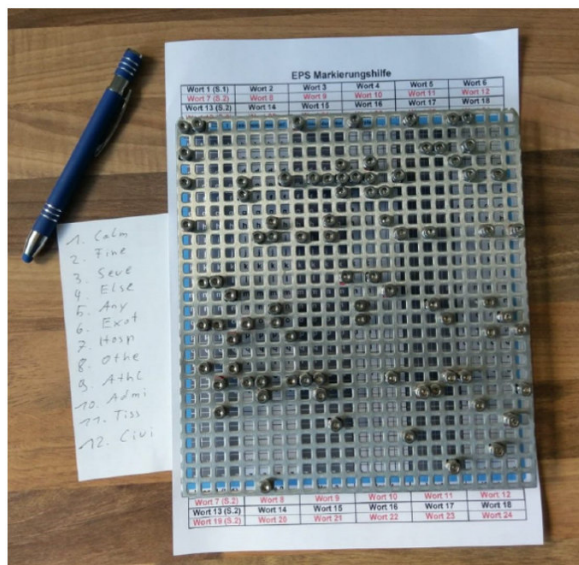Start by screwing the reading page 2 and proceed as follows:

- Turn the plate, so that you see the marks on reading side 2.
- Put screws through the holes (same
  direction as before, i.e. from reading side 1 in the direction to reading side 2).
- Turn one, two or three reading nuts (finger-tight) onto the screw, depending on the markings.
- Take a lock washer and put it over the thread.
- Take an end nut and turn it until it locks with the lock washer to the reading nuts or the plate (hand-tight).
- Take the Allen key and the open-end wrench and turn it tightly (4-5 Nm).

Note: It has been found that it is better to perform all the fittings from steps 5.1 and 5.2 together, column by column! Per column, a maximum of 4 screws are installed. So there is usually enough space to rotate the wrench when mounting around the screw. If the bolting principle from paragraph 5.1 and 5.2 is understood so first, you should perform both steps together and column by column!

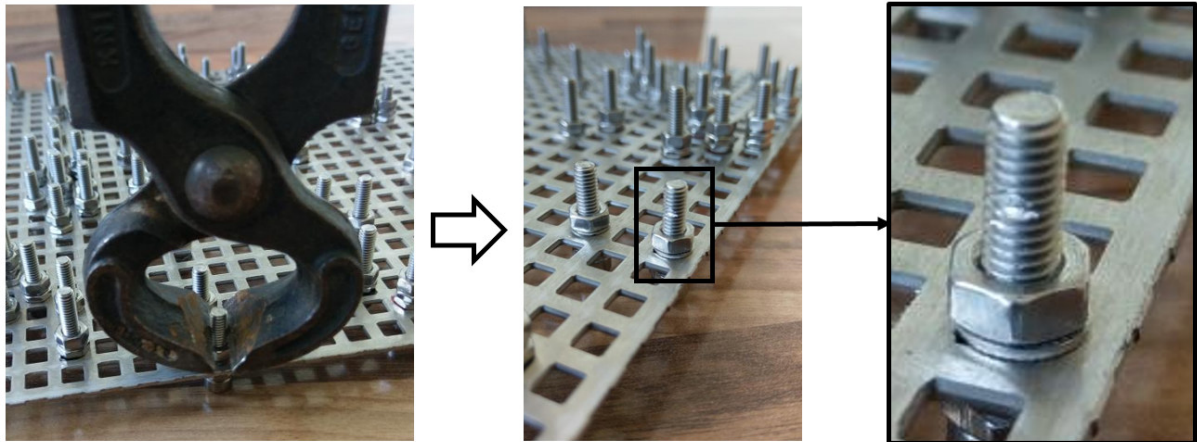**Step 6: Check the 24 words (!! important !!)**

To check the correctness of the marked words proceed as follows:

- Place the ready-screwed storage plate with the reading side 1 onto the marking aid.
- Read the words from the record using the reading nuts and note the letters for the single words (max. 4 letters per word).
- Turn the plate over and write the words from reading side 2 onto the piece of paper.
- Check your words read from the plate with your original ones (your passphrase).
- Correct any discrepancies
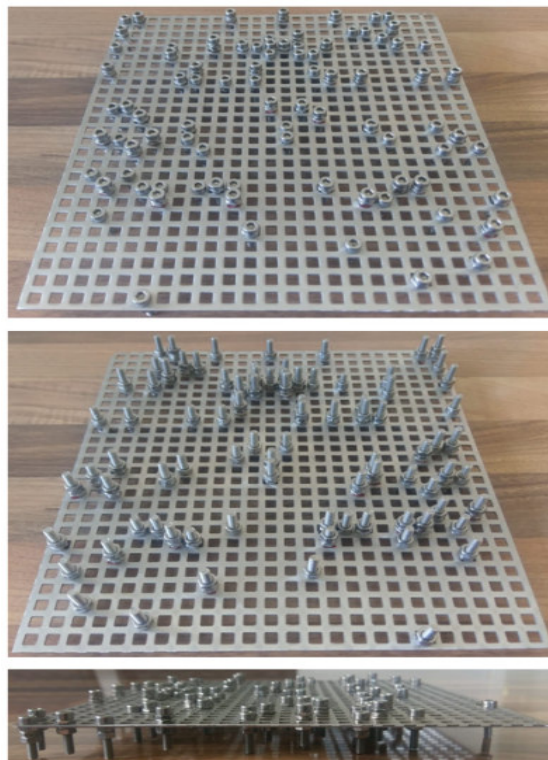
Step 7 (optional): Destroy the threads

If you are really sure that everything is correct, you can cut off the remaining threads with pliers. This way you make sure the nuts can only be unscrewed with force.

Step 8: Safely store the disk

After successful inspection, you should secure your storage disk against theft and unintentional disposal. Whether you just hide the plate in the end, in a safe or in your safe deposit box is up to you.

In the end, your plate should look alike this:

Legal notice:
- No liability for the correctness of your created passphrase!
- ONLY YOU ARE ALONE RESPONSIBLE FOR YOUR ACTIONS