

## **Motifs from Birka and Mammen**

*Woven using a missed hole technique, with variations that can be woven with the same warp setup*

### **Description**

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The band shown in Figure 1 features a motif from a band found in Birka grave 824<sup>1</sup> (Sweden, 9<sup>th</sup> - 10<sup>th</sup> century). The original band was woven in silk with silver brocade.



**Figure 1: twining motif from Birka band B12.**

**Samples woven in two-ply Silver Viscount machine knitting wool**

The second sample band (Figure 2) features the pattern from the narrow Mammen brocaded band (Denmark, 10<sup>th</sup> century). The Mammen band is part of a “pennant” or “fillet” whose purpose is unknown but it is beautifully and richly constructed from silk cloth with inset panels of silk and gold naalbinding. The tablet woven band is silk brocaded with gold thread. Hansen says that the original band was woven with nine pattern tablets and that while the pattern tablets now only carry two silk threads, there would have originally been vegetable threads (generally thought of as flax i.e. linen) in the other holes.

1 Band B12



**Figure 2: design from the narrow Mammen brocaded band.**

The sample bands are all woven on the same warp setup using a “missed hole” technique, in which one hole of each pattern tablet is left unthreaded, creating a ground weave with an attractive texture where the weft shows. A single red thread opposite to the vacant hole allows a wide range of motifs to be woven.<sup>2</sup> The pattern is made by turning some tablets forward and others backward according to a weaving diagram.

Care must be taken when handling the tablets as the missing thread makes them unstable and they will easily fall out of position. If you slide the tablets against the fell (the edge of the woven cloth) when you are not actively weaving, they will remain in place, and you can tie a string around the tablets for extra security.



**Figure 3: motif from the woollen Mammen band**



**Figure 4: additional viking-style motifs.**

<sup>2</sup> This missed hole technique is known from Hofdi, Iceland and Uvdal, Norway where warp patterning was combined with brocading (surface weft decoration). These very complex bands are thought to be twelfth / thirteenth century but it is likely the basic technique was known earlier.

Difficulty	Medium
Authenticity	<b>B</b> Period techniques and period motifs, with additional motifs in a similar style. Suitable for Viking re-enactment, medium status.
Number of pattern tablets	10
Number of border tablets	10
Weaving technique	Missed hole threading. Diagonal motifs created by individual turning of tablets.

## References

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**Collingwood, Peter.** *The Techniques of Tablet Weaving.* New York: Watson-Guption, 1982.

**Geijer, Agnes.** *Die Textilfunde aus den Gräbern. Birka: Untersuchungen und Studien III.* Uppsala: Kungl. Vitterhets Historie och Antikvitets Akademi, 1938.

**Hald, Margrethe.** *Ancient Danish Textiles from Bogs and Burials: A Comparative Study of Costume and Iron Age Textiles,* trans. Jean Olsen. Archaeological-Historical Series Vol. XXI. Copenhagen: The National Museum of Denmark, 1980.

**Hansen, Egon H.** *Tablet Weaving: History, Techniques, Colours, Patterns.* Hovedland 1990.

**Leet, Kris; Malan, Linda.** *The Willful Pursuit of Complexity: Rediscovering the Vacant-Hole Technique, the Hofdi and Uvdal tablet woven bands.* Seattle Weavers Guild, 2004.

# Threading

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## Pattern tablets

Ten pattern tablets, each threaded with two yellow threads and one red, arranged yellow / red / yellow / empty. It doesn't matter how the tablets lie when you thread up, so long as the empty hole is opposite to the red pattern thread. You will arrange the tablets correctly in the next step.

Pattern tablets are numbered 1-10.

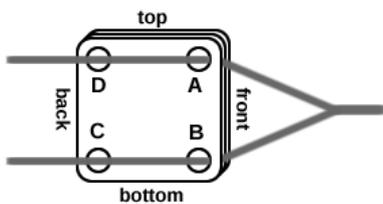
## Border tablets

Five border tablets on each side. The first and fifth border tablets are threaded with four read threads. The second through fourth border tablets are threaded with four yellow threads. Orient the border tablets alternately, S Z.<sup>3</sup>

Border tablets are not numbered because they are not manipulated in the pattern, and you may design any border you like.

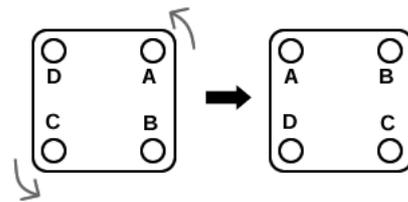
## Weft

Use the same yellow thread for the weft as the two yellow background threads, because it will show in the gaps.



**Figure 5: labelling the positions.**

*A, B, C, D show the positions of the threads in the threading diagram. Most weavers do not label their tablets because which hole is "A" changes as you turn them.*



**Figure 6: turning the tablets forwards.**

*If you work with the woven band on your side of the tablets, push the top of the tablets away from you with your thumbs.*



**Figure 7: flipping a tablet to change it from S to Z (top view).**

<sup>3</sup> Orientation refers to the direction the threads pass through the tablets (Figure 7).

## Weaving the Birka twining motif

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After you've threaded the tablets, arrange them to match Position 1 in Figure 8:

1. Flip the tablets as necessary so that the tablets 1-5 are Z-threaded and 6-10 are S-threaded.
2. Turn tablets as necessary until the threads are in the correct places, for example tablet 1 should have the red pattern thread in the bottom back hole.<sup>4</sup>
3. Weave 8 picks<sup>5</sup>, turning all tablets forwards: the tablets should now be back in Position 1.
4. Continue working up the weaving diagram. Each horizontal row of the diagram shows how to turn the pattern tablets for that pick: a white box means turn the tablet forwards, and a grey box means turn it backwards<sup>6</sup>.

Figure 8 shows the position of the tablets at key points, so you can check you are at the right place.

After you have reached the top of the diagram, the tablets should be in Position 1 and you can start again at the bottom of the diagram.

The unwoven warp of the central tablets will gradually become twisted. If you alternately weave this pattern followed by its mirror image shown in Figure 9, the twist will cancel out.

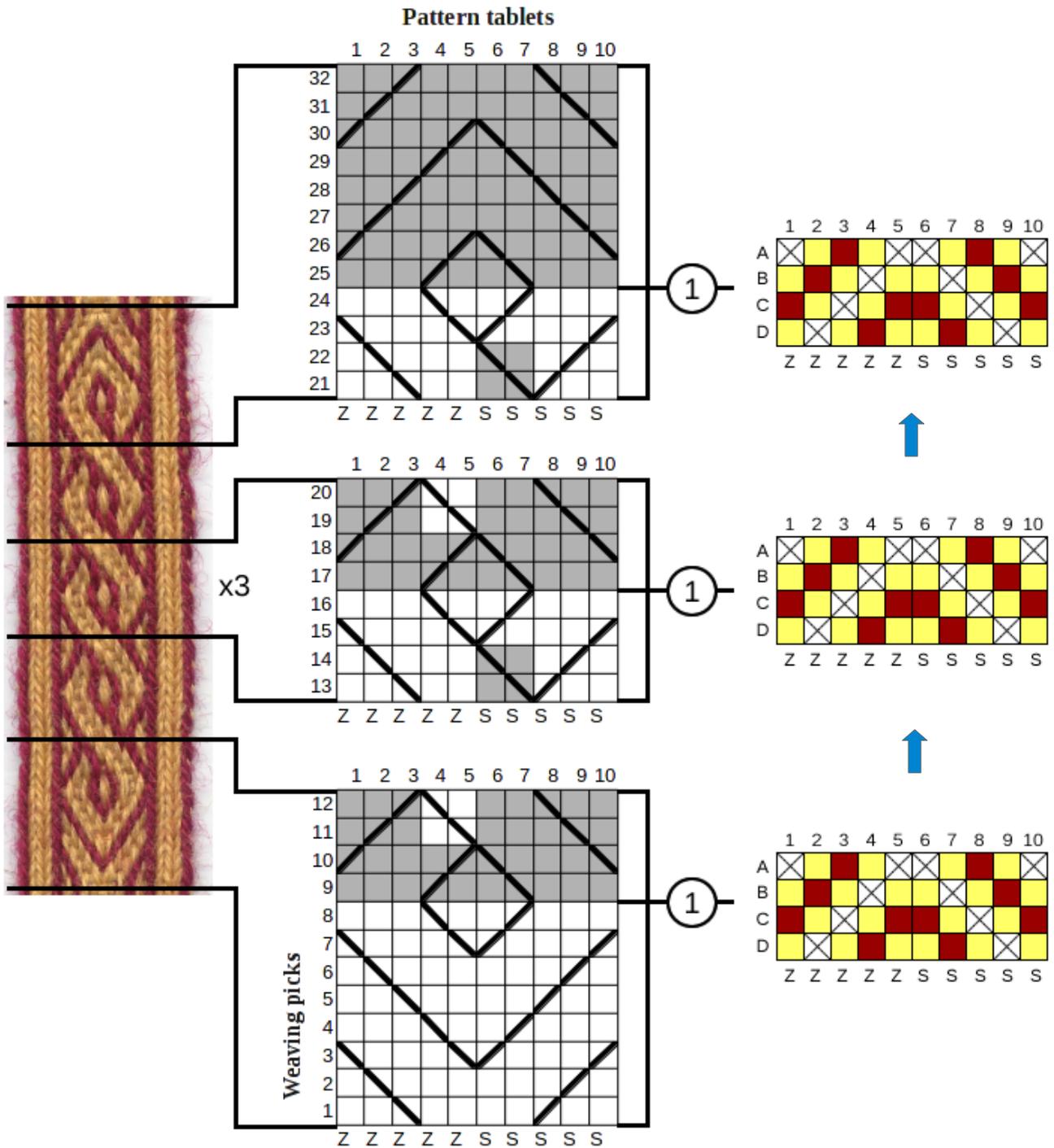
When the border warp threads become tightly twisted, flip the first and fifth border tablets on each side of the band. Weave another two picks and then flip the second through fourth border tablets on each side. This will reverse the twining and undo the twist. To make this as inconspicuous as possible, flip the border tablets at a point when you are not also changing the turning direction of the pattern tablets.

4 The “fell” is the leading edge of the woven fabric.

5 One “pick” is a single unit of weaving, that is turn the tablets, clear and beat the shed, tighten and then pass the weft.

6 “Backwards” means turn the tablet in the opposite direction, so the holes labelled AB would move to the bottom of the tablet, not the top.

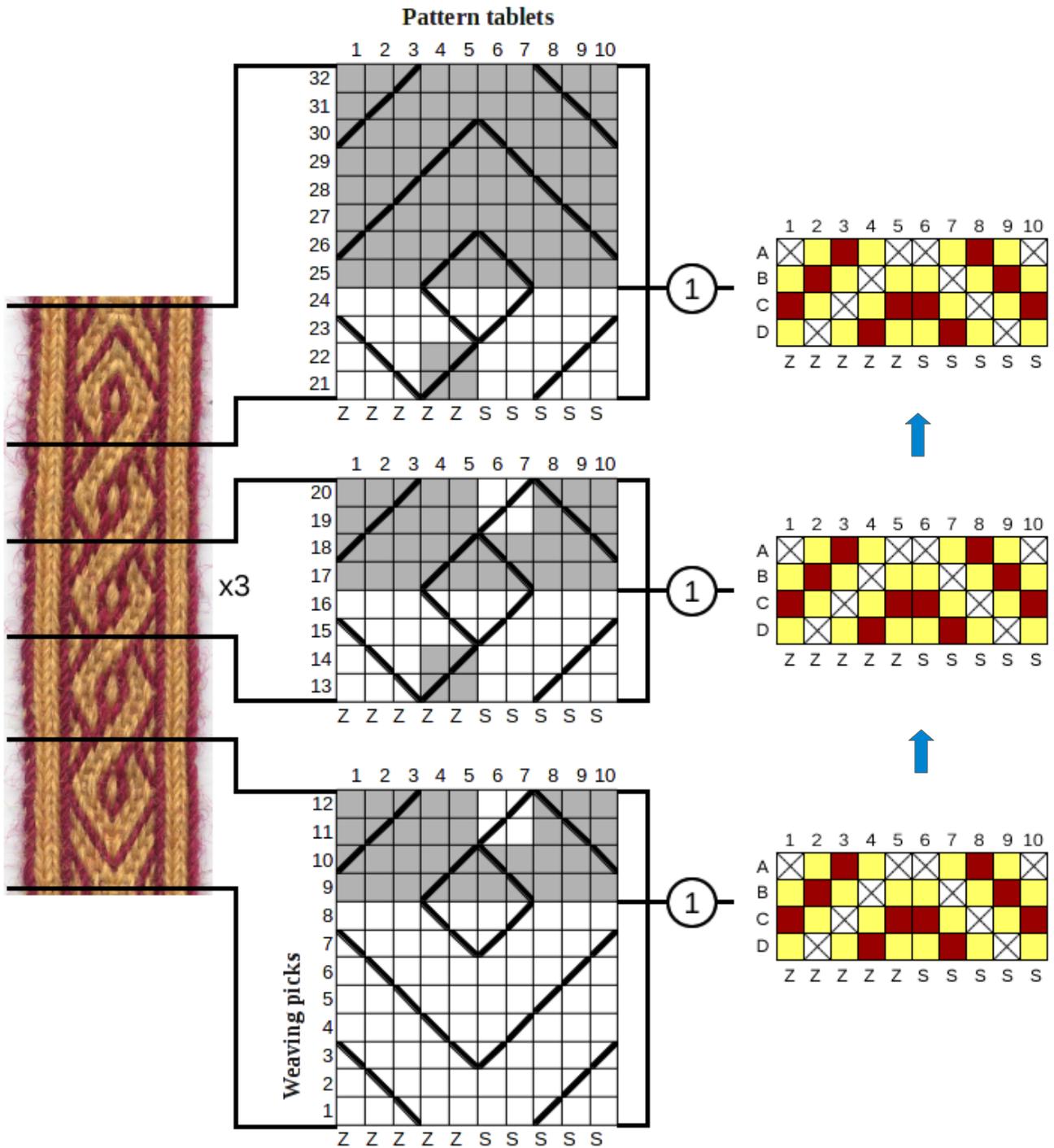
- Turn tablet forwards
- Turn tablet backwards
-  Diagonal line shows pattern thread
-  Yellow thread
-  Red thread
-  Empty (no thread)



**Figure 8: weaving instructions.**

Start at the **bottom of the diagram** and work upwards.  
 The tablets will return to Position 1 after every four picks.  
 Repeat the central section twice, so that you weave it three times in total.

- Turn tablet forwards
- Turn tablet backwards
-  Diagonal line shows pattern thread
- Yellow thread
- Red thread
- Empty (no thread)



**Figure 9: weaving the reversed twining motif to cancel twist build up.**

Start at the **bottom of the diagram** and work upwards.

The tablets will return to Position 1 after every four picks.

Repeat the central section twice, so that you weave it three times in total.

# 'Key' motif

This motif is not based on a particular historic find but it is in the style of Viking-age tablet weaving. Note that the tablets should be flipped so they are **all Z-threaded** before turning them to match Position 1.

- Turn tablet forwards
- Turn tablet backwards
- Diagonal line shows pattern thread
- Yellow thread
- Red thread
- Empty (no thread)

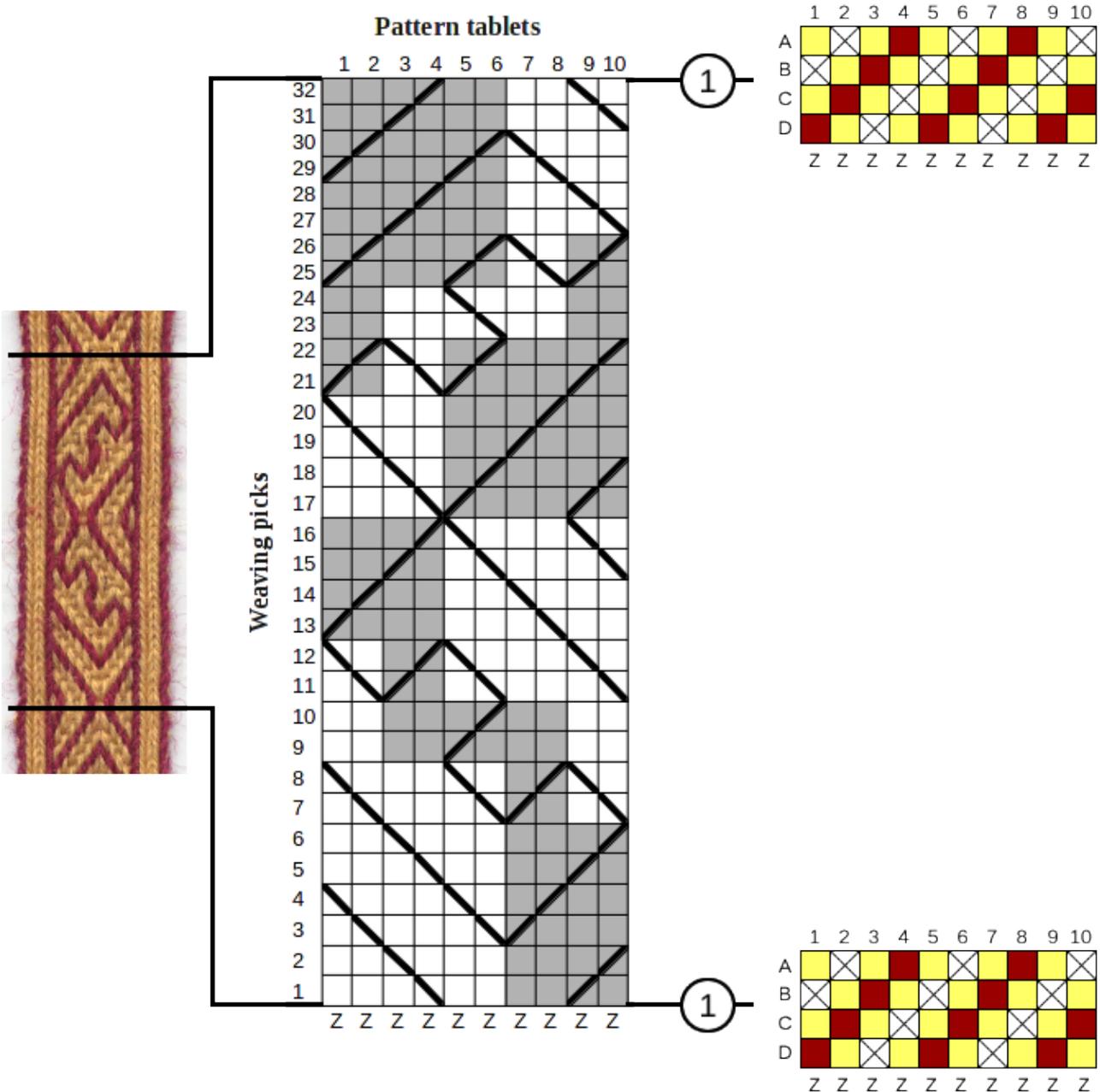


Figure 10: weaving the 'key' motif.

# 'M' motif

This motif is not based on a particular historic find but it is in the style of Viking-age tablet weaving. Note that the tablets should be flipped so they are **all Z-threaded** before turning them to match Position 1.

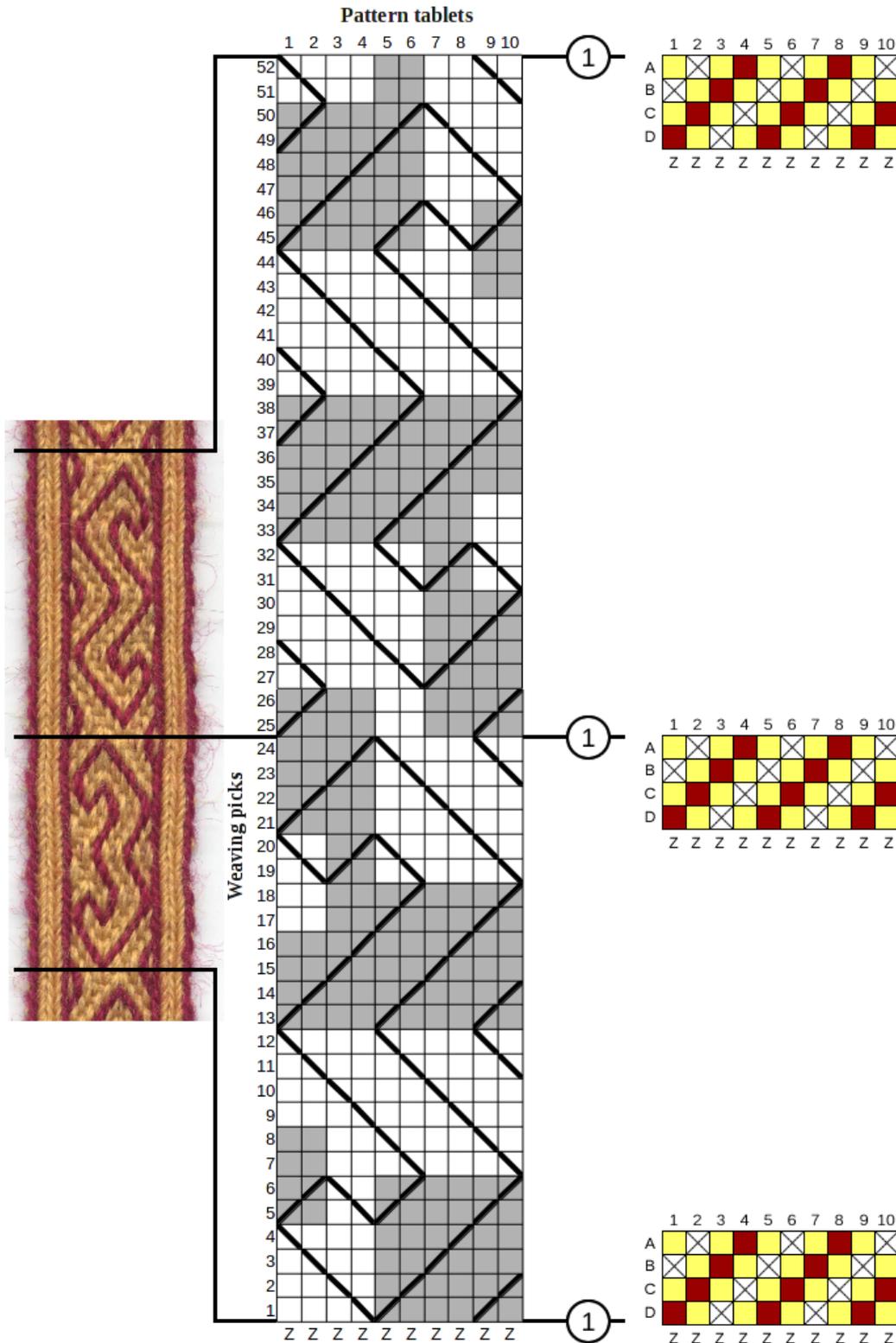


Figure 11: weaving the 'M' motif.

# Design from the narrow Mammen brocaded band

Note that the tablets should be flipped so they are **all Z-threaded** before turning them to match Position 1.

- Turn tablet forwards
- Turn tablet backwards
- Diagonal line shows pattern thread
- Yellow thread
- Red thread
- Empty (no thread)

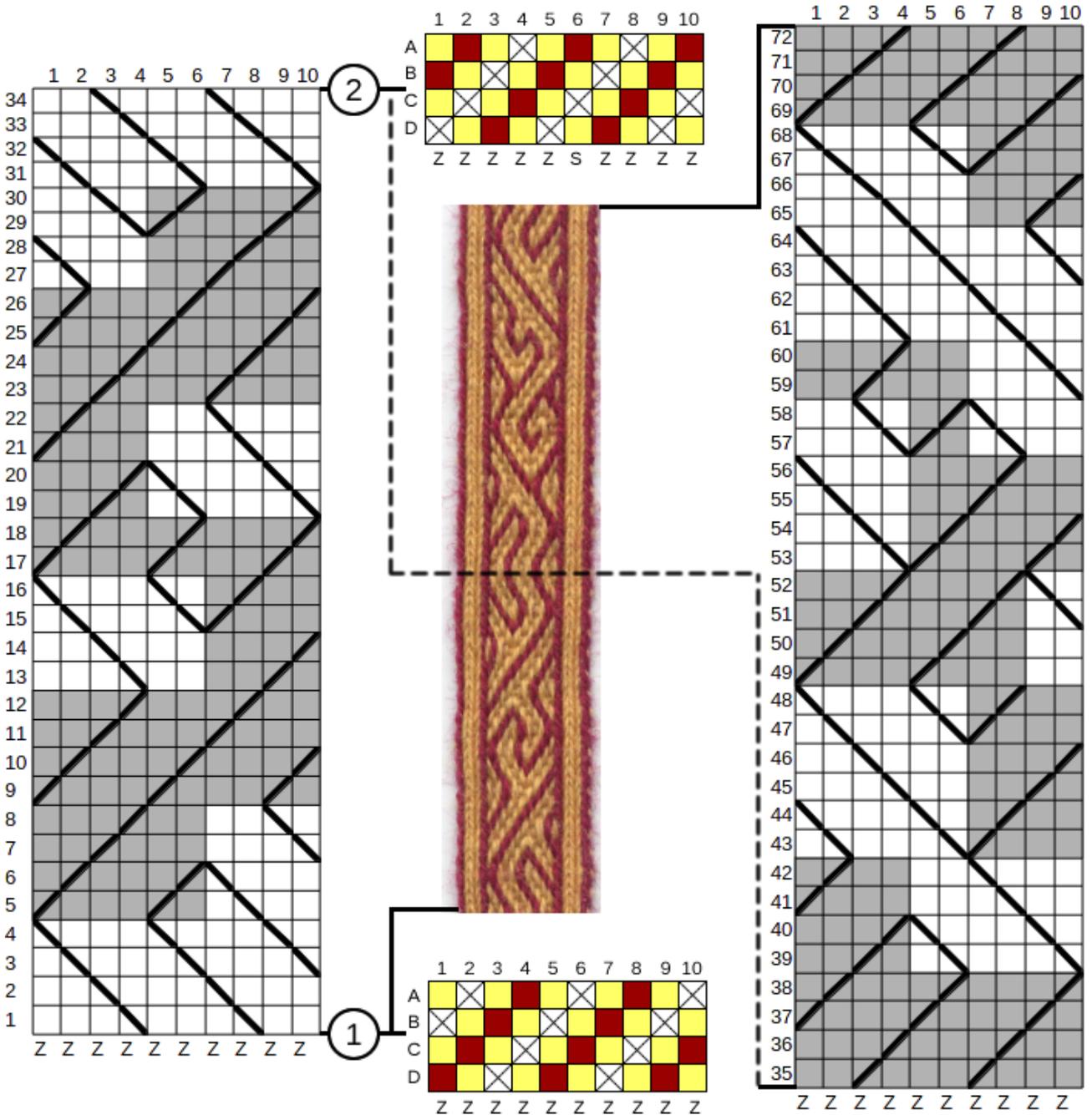


Figure 12: weaving the design from the narrow Mammen brocaded band.