Framing instructions for RBT stereo frames

For the interference-free projection of stereo slides, it is absolutely essential that the two stereo fields (i.e. the two individual slides) are projected onto the screen in the correct position and without offset. Precise alignment of the fields within the slide frame is therefore essential. The use of RBT stereo frames (Oemunichen system) makes this otherwise difficult task extremely simple, as these frames allow the two fields to be aligned both vertically and horizontally. Once framing is complete, the frame is closed, thus permanently preserving the framing work.

Adjustment in vertical direction

Vertical adjustment can be used to compensate for so-called height errors in the two fields. Height errors occur in the camera due to different film positions or a slight vertical offset of the optical axes. Unfortunately, they can never be completely avoided and must therefore be compensated for in the stereo frame. To fix the individual slides in the stereo frames, the studded strips enclosed in each pack are used, whereby one slide is hung in exactly one studded strip (50 stereo frames = 50 black lower frame parts + 50 white upper frame parts for 100 individual slides, i.e. 100 studded strips). The nub strips are inserted into one of the two guide grooves that run above and below the picture windows in the stereo frames. An asymmetrical arrangement of the nubs on the nub strips as well as an offset of the guide grooves relative to the centre of the film enables a finely graduated correction of different height errors through different positioning of the nub strips: In this way, height errors of ±0.1mm, ±0.2mm, ±0.3mm and ±0.4mm can be compensated. To characterise the nub- non symmetry, the nub strips are provided with a hole on one side, whereby the nubs are offset in the direction of the hole. The various possible combinations with the resulting height shifts are shown in the drawing on the reverse.

The following procedure is recommended in practice:

1. place the black lower part of the stereo frame on the work surface, preferably on a small light stand or similar, and make sure that the frame marking (small triangle in the centre of the upper guide groove) is pointing upwards.

2. place two studded strips in the upper guide groove, both with the hole facing downwards. Now press the two individual slides into the nub strips in the correct position and sideways (i.e. upright, left stereo slide to the left and right stereo slide to the right; the left stereo slide has the larger perforation number for stereo cameras with film transport from left to right). The lateral position of the slides is initially still irrelevant.

3. check for height errors. To do this, carefully press the slide flat against the frame and compare (preferably with a magnifying glass) where the bottom edge of the window cuts off the image. The same number of image elements should be visible on both slides. If this is not the case, a correction must be made. If less can be seen on the left slide than on the right (case A), the left slide must be moved slightly upwards. To do this, turn the left studded strip round (hole now facing upwards): Height offset now -0.1mm. Conversely, if less is visible on the right-hand slide (case B), the right-hand studded strip is turned round: height offset then +0.1 mm.

4 Check the height error again. If the same number of picture elements can now be seen in both slides, the vertical adjustment is complete. If not, further corrections must be made. If there is still less visible on the left-hand slide (case A), the right-hand studded strip is now placed in the lower guide groove, hole facing upwards. The left studded moulding remains in the upper guide groove and is returned to the old position with the hole facing downwards: height offset now -0.2 mm. The same applies to case B: if there is still less visible on the right-hand slide, the left-hand dimple moulding is placed in the lower guide groove. If both holes are orientated towards the centre again, the following applies for the height offset: +0.2inm.

5. check the height offset again and adjust as follows if necessary: From the last position described with the holes orientated towards the centre (height offset 1-0.2mm), turn one of the two studded strips around within its guide groove so that one strip is now orientated towards the centre and one towards the outside, resulting in an offset of ±0.3mm. If you turn both nub strips round so that both strips are orientated outwards, you finally get ±-0.4mrn.

6 Once you have found a satisfactory setting for a slide from a particular camera, you can start with this setting for all other slides, as the dispersion of a camera's height errors is usually limited.

7 Of course, the height offset can also be checked at the top of the image, provided that there are suitable image details there. In most cases, however, the lower edge of the image is much more suitable. With an adjustment mask available from RBT, which contains several horizontal guide lines, the height error can also be checked at any point within the slide.

Adjustment in horizontal direction

The adjustment in the horizontal direction not only determines the visible image section in the stereo image, but also determines the arrangement of the spatial image relative to the stereo window. The stereo window is the stereo image formed from the two individual windows, which automatically appears as a virtual frame around the stereo image during viewing.

Horizontal image adjustment is simply carried out by moving the nub strips in the guide grooves. There are two different methods for this.

Method 1 uses the small coloured cross as an adjustment aid. coloured cross, which can be found in the bag of the nub strips.

This cross fits exactly into the guide grooves of the slide frames and forms a stop for the nub strips. However, its four arms still need to be shortened. This method takes advantage of the fact that the position of the film perforation relative to the exposed image is always the same (at least with one and the same RBT camera). The exact extent to which the arms of the cross should be shortened depends on the camera whose images are to be framed. As an indication, the distance between two image points on the left and right fields belonging to an infinitely distant object should be 63.2 mm. This value is calculated from the sum of 62.0 mm frame base and 1.2 mm maximum deviation (transverse disparity). Both distances can also be checked very easily with the RBT adjustment mask. The adjustment mask is inserted into the adjustment cross and can then be slid back and forth laterally underneath the cross and resting on the slides.

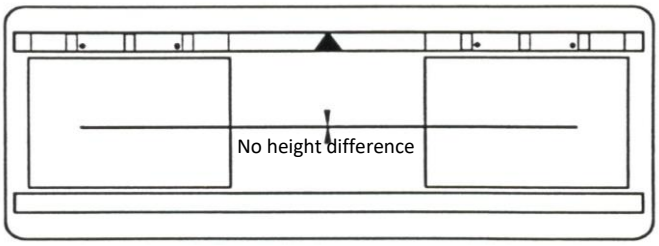
With this framing method, all images are framed in exactly the same way. It is suitable for all standard shots that contain infinitely distant objects as pixels.

Individual framing, e.g. of close-ups without an infinity point, is only possible with method 2. In this case, the position of the nub strips is adapted to each image individually. To ensure that a setting is retained once it has been found, the nub strips are correspondingly stiff. For this reason, you should use a small tool with which you can pull or push directly on the nub strips, e.g. bent tweezers with which you can also grip the slides. At the same time, hold the lower part of the frame with the fingers of the other hand and press it slightly against the work surface.

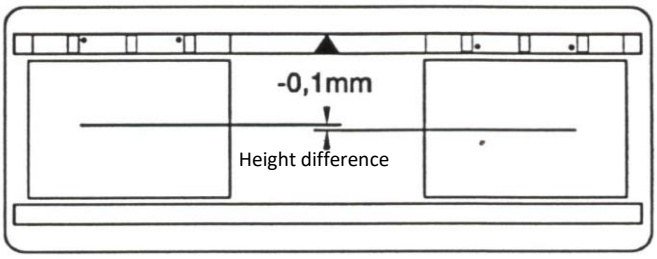
The correct image position is then checked directly during the displacement of the nub strips. However, this is only possible if the frame is on a light table and the slide on it is viewed stereoscopically, e.g. with the aid of two viewing lenses mounted next to each other or without any aids at all. The stereo image moves forwards or backwards in the illusory window by moving the nub strips (push half images together: The image moves forwards. Pull the fields apart: The image moves backwards). The correct image position is achieved exactly when no more image elements are cut off by the image frame and the entire image is behind the dummy window (with some exceptions). It is best to start the adjustment by positioning the fields too close together and slowly pulling them apart. When the last picture element has just moved behind the dummy window, the framing is complete. When taking close-ups, it may well happen that a slide has to be pushed beyond its lateral edge into the frame window. In this case, repeat the framing with the next smaller frame format.

The frame is now closed by pressing the white upper part of the frame onto the black lower part. Again, make sure that the frame markings (small triangle on the inside, recessed grip on the outside) point upwards.

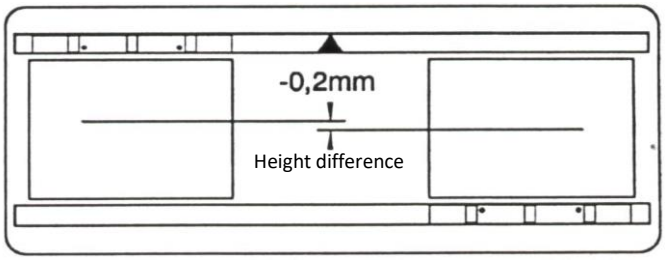
Translated from German RBT manual.



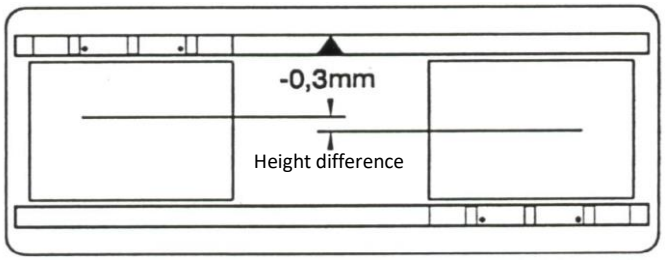
Dimple strips in the same guide groove, same orientation of the marking holes: no height offset.



Dimple strips in the same guide groove, opposite orientation of the marking holes: Height offset: ±0.1 mm.

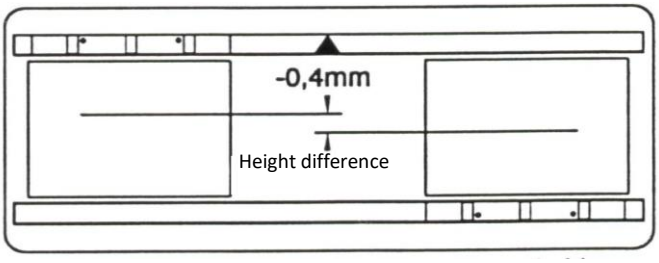


Dimple strips in various guide grooves, marking holes orientated towards the centre: Height offset: ±0.2mm.



Dimpled mouldings in different guide grooves, same orientation of the marking holes: Height offset: ±0.3 mm.

Dimple strips in different guide grooves, marking holes orientated outwards: Height offset: ±0.4 mm.



Available formats of the RBT stereo frames:
21 x 16 mm (half format, e.g. NIMSLO)
23 x 21.5 mm (square format, e.g. Realist)
23 x 28 mm (Belplasca, FED)
23 x 31.5 nun (RBT)
23 x 33 mm (RBT, full format).