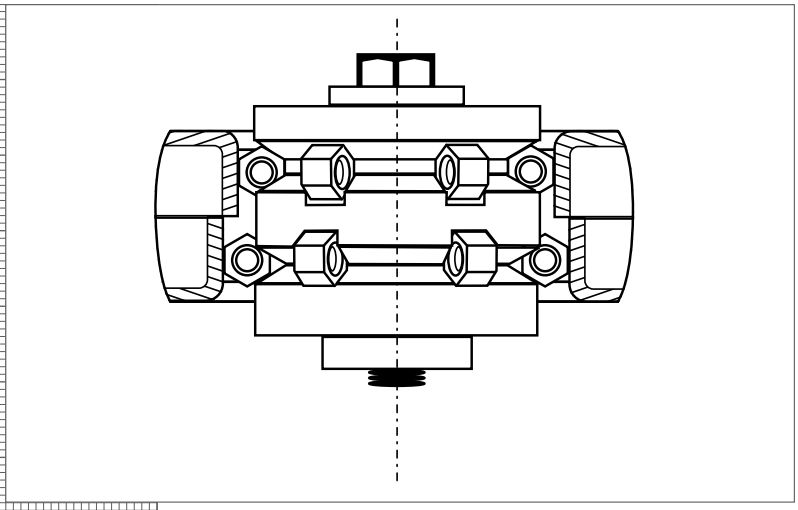
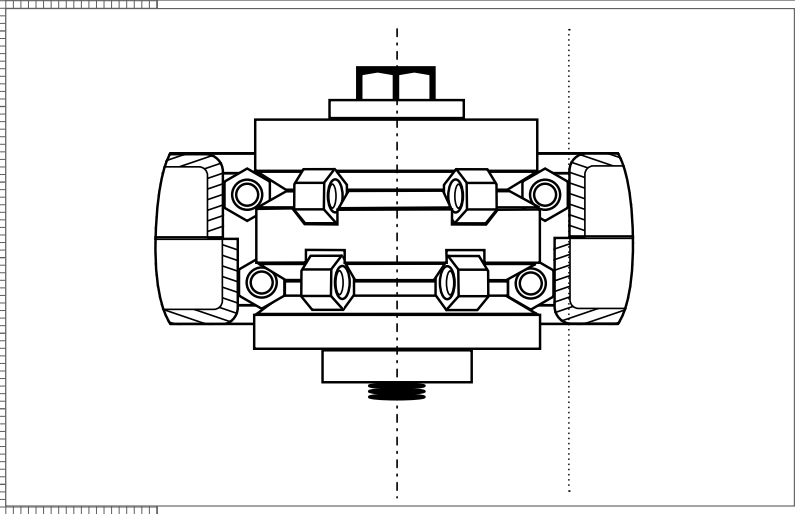
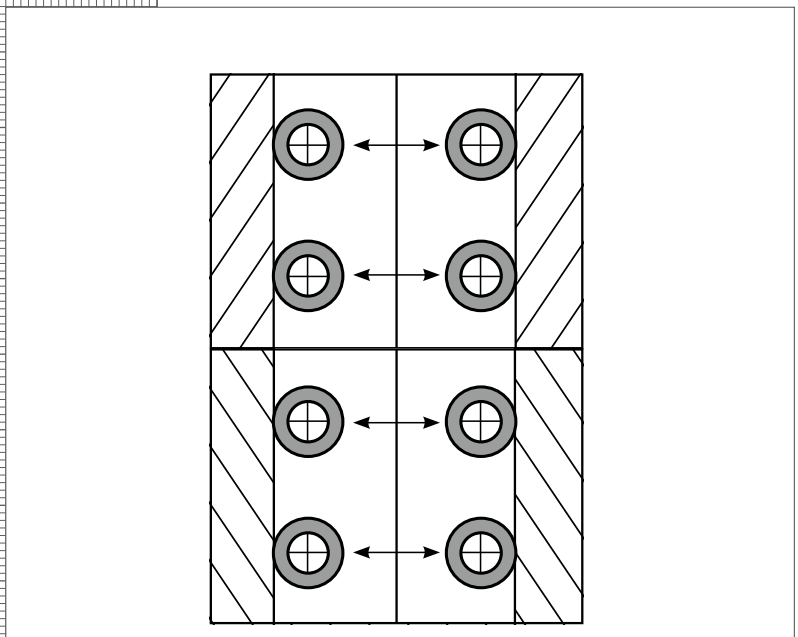
Two-level centering clamp







Combining different materials through welding, bonding or similar

Task:
Two stamped, mirror-image half shells with a rim hole and a diameter of 85 mm, with a 12-mm lip, need to be aligned precisely with one another. They are aligned along the vertical axis of the diameter, which allows for spot welding of the outside contour in the automated process.

Solution:
In order to locate the vertical axis precisely and with repeat accuracy, a two-level clamp is used. Each level clamps the respective diameter individually, thereby balancing out the tolerance of the Ø 85. This ensures that the precise positioning and clamping requirement is met.

Procedure:
The bottom shell is placed over the two-level clamp and positioned using an external block. The same is done for the top shell. Then they are clamped using an Allen wrench.

The clamping process begins on the 1st clamping level with the bottom shell. After that, the top shell is clamped on the 2nd level. This clamping process is independent of the tolerances for the rim holes.

Summary:
This method, using a countercyclical clamping process, ensures precise centering of both sheet-metal shells.