

Location of Drawbeads

The positioning of the drawbeads is crucial to their effectiveness. They should be close to the area requiring restraint and perpendicular to the flow of material.

If the drawbead is too far from the trim line and/or punch opening line, as in the case of Dimension "X", then the drawbead is unable to supply sufficient restraining force to control the material during forming.

Conversely, as in the case of Dimension "Y", if the bead is too close to the trim line, then material pulled over the bead can end up inside the trim line, and will be visible on the finished product. If the draw-wall is an open angle, the drawbead should be as close as practical to the POL as the component material will be unsupported during the forming operation and will therefore require tighter control. This is especially true if the POL has curvature.

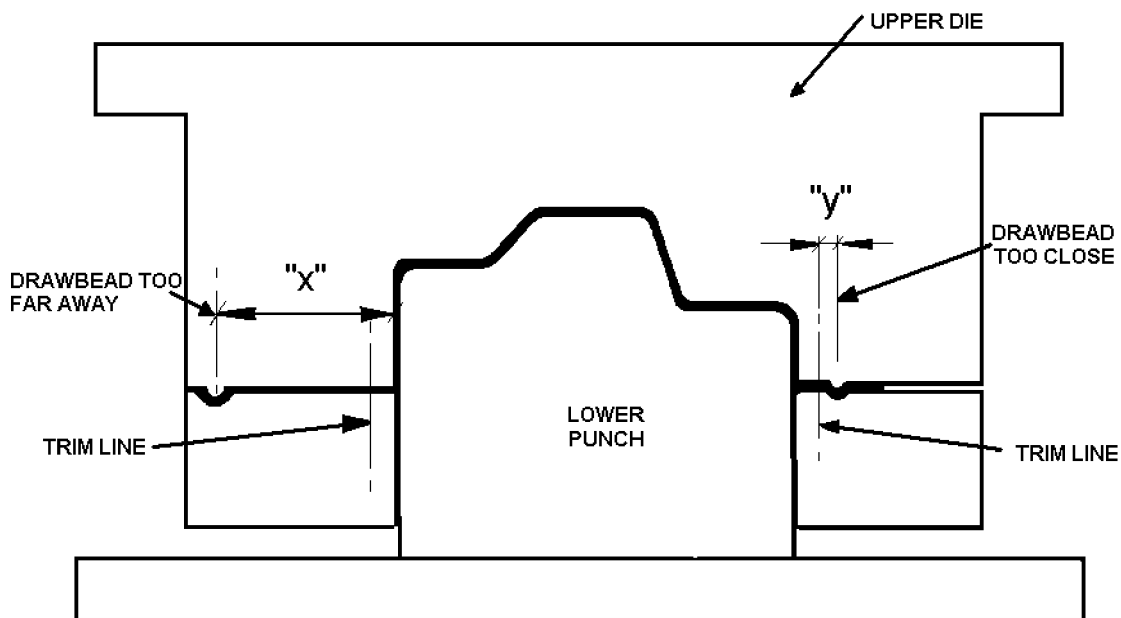


Figure 5-25. Position of Drawbeads

Drawbeads generally achieve maximum effect of control when placed perpendicular to the flow of material. This can be examined by the marks made on the drawn shell by the beads.

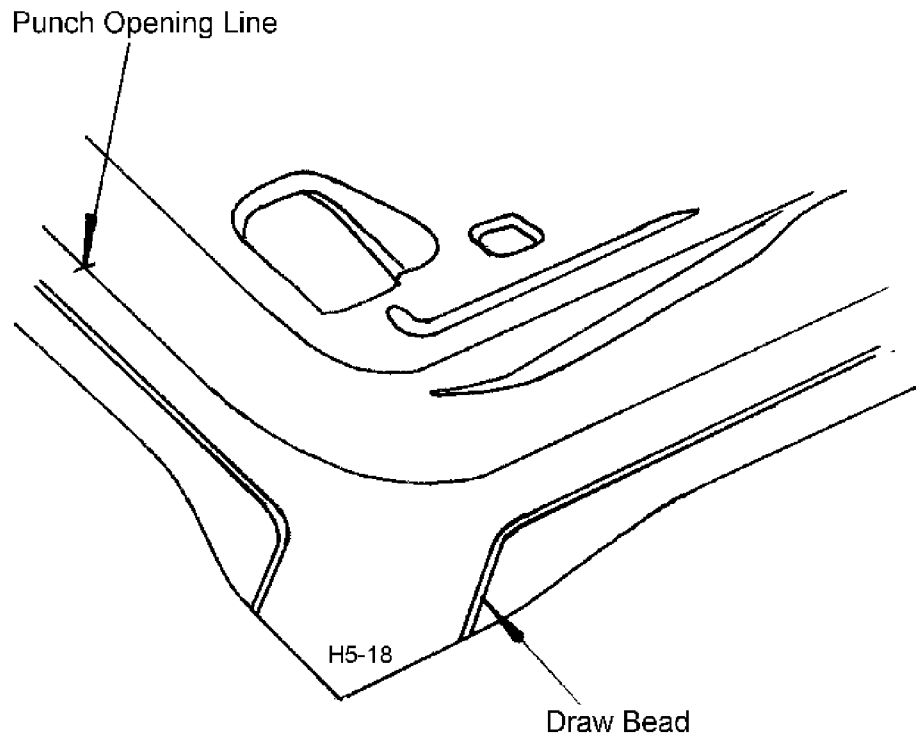


Figure 5-26. Typical Position of Drawbeads on a Door Inner Panel

- To reduce the flow of material between the binder faces, it is not good practice to simply keep increasing the pressure. This results in higher stress values being imposed on the die and press and will reduce the cost effectiveness of the operation. Instead, the draw-bead should be adjusted in accordance with the analysis of panel movement.