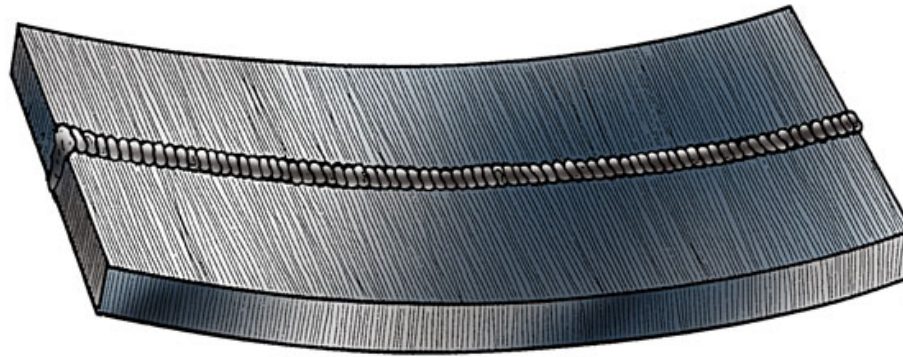
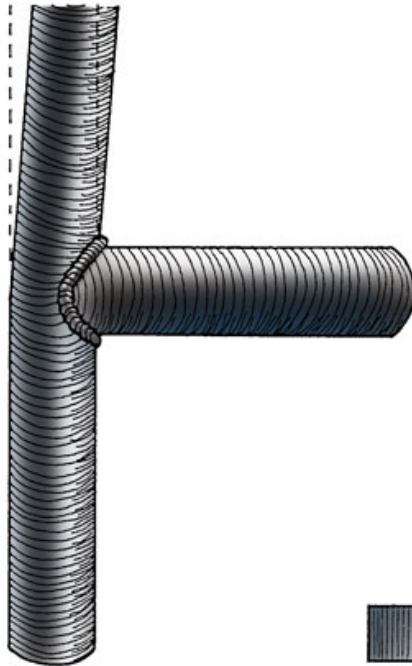


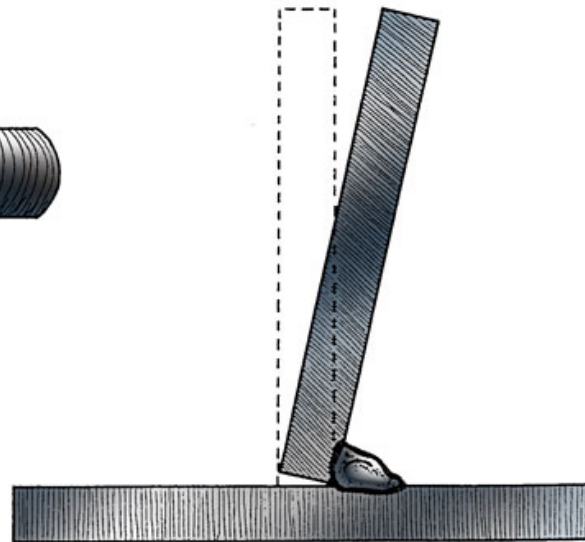
Distortion in Welding



Butt weld

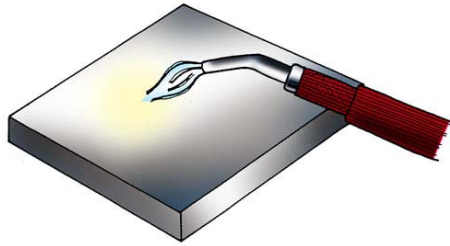


Pipe weld

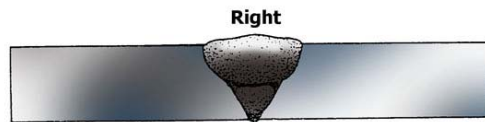
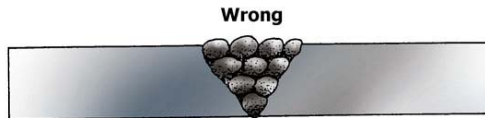


Fillet weld

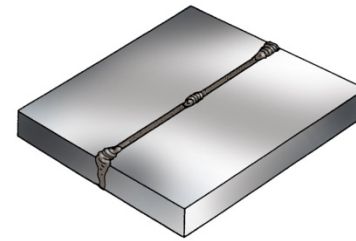
Welding Techniques to Control Distortion



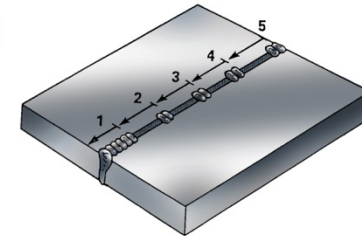
Preheating the base metal



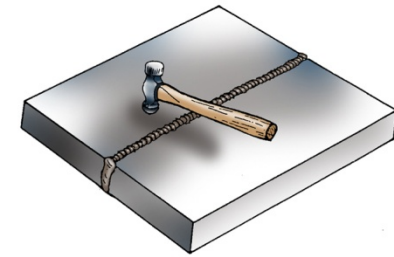
Use fewer passes



Tack welding



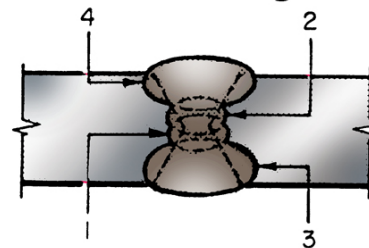
Back-step welding



Peening

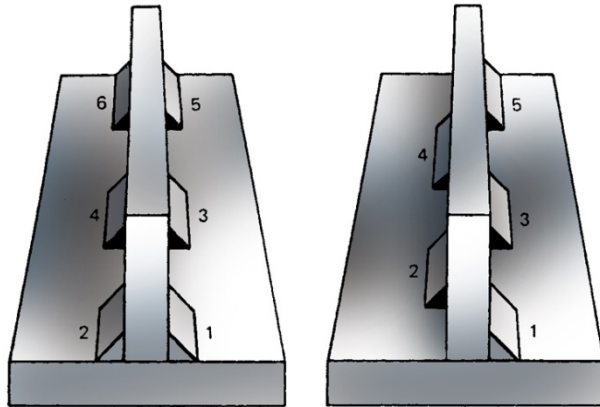


Positioning



Alternate sides

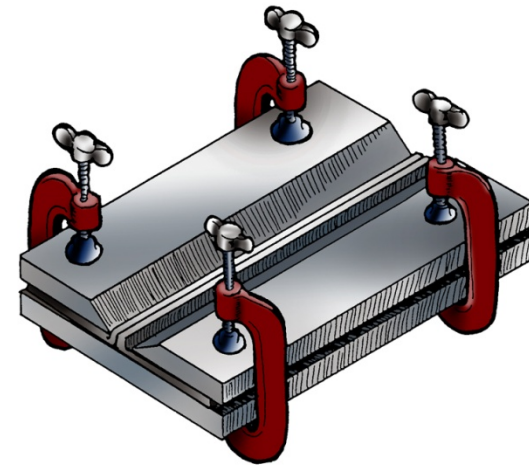
Welding Techniques to Control Distortion



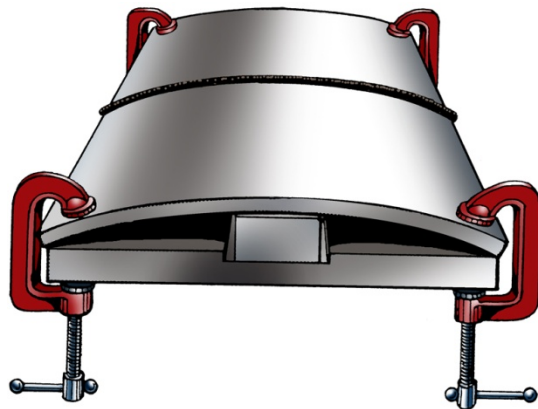
Intermittent

Staggered

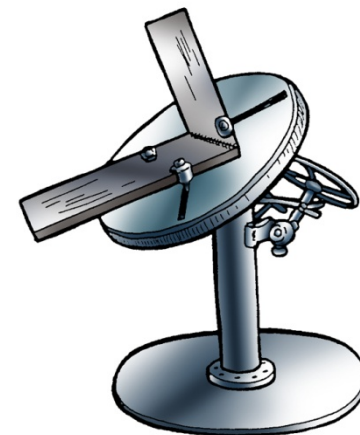
Using intermittent and staggered beads



Using clamps



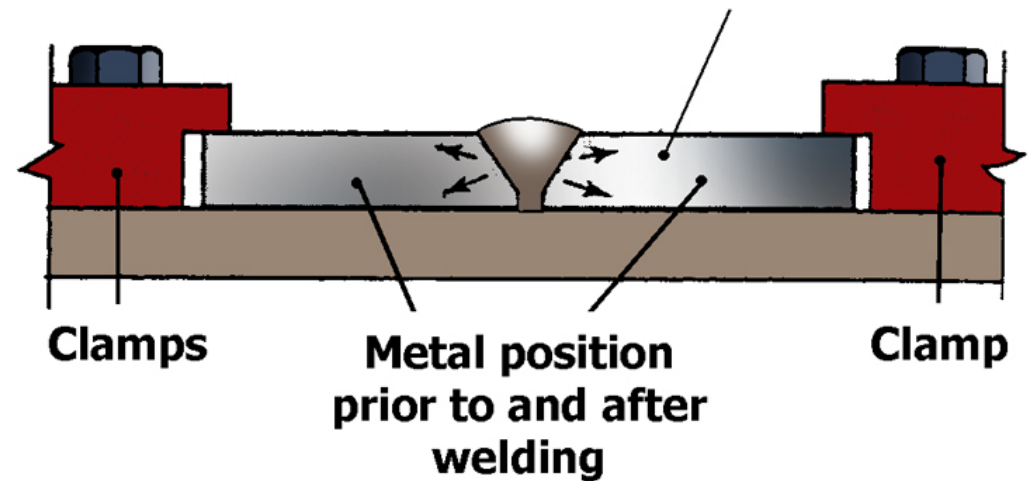
Prebending and using clamps



Using jigs

Distortion and Residual Stress

**Clamped-residual stress could
cause distortion later**



**Unclamped-residual
stress may be
released**

**Distortion in cooled
weld caused by
stress while heating
and cooling**

