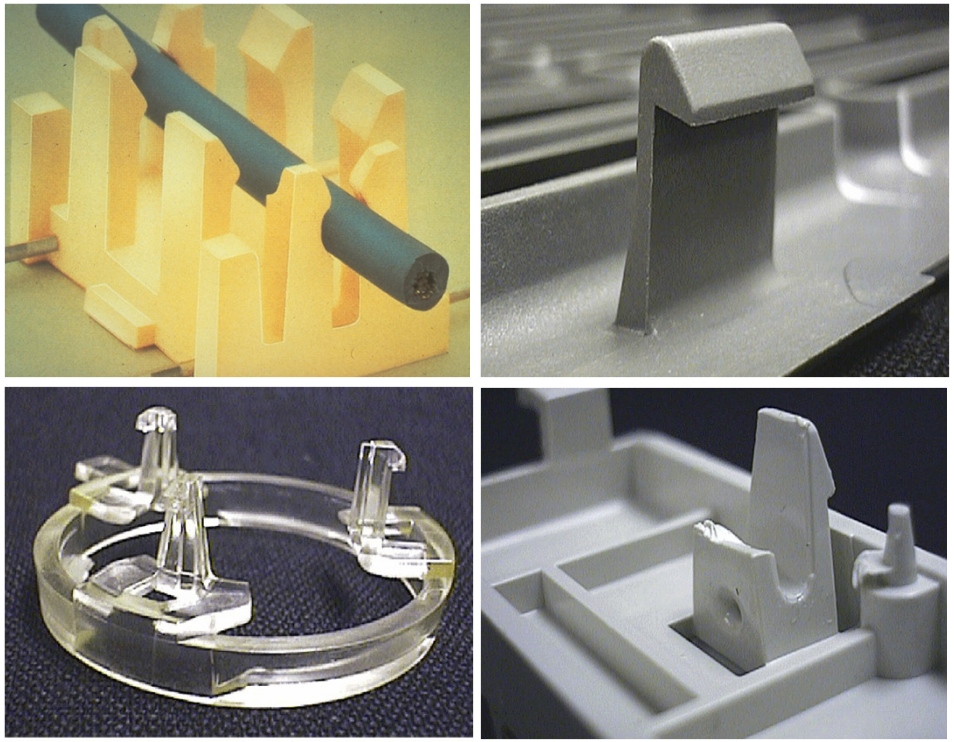
Snap-Fit Joints in Plastics



Lanxess HK

Semi-Crystalline Product

Asia Pacific

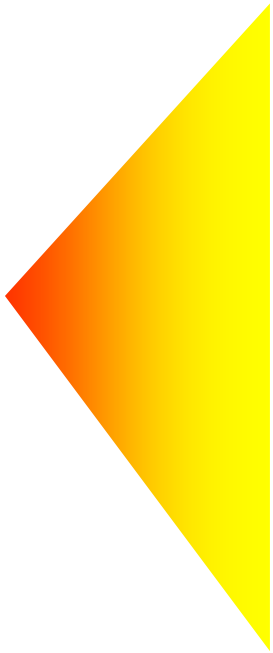
Content

- Introduction to Snap-Fit Joints in Plastics
- Snap-Fit Joint Types
- Design Factors for Snap-Fit Joint
- FEM Demonstration

Introduction to Snap-Fit Joints in Plastics

Plastic Joining Techniques

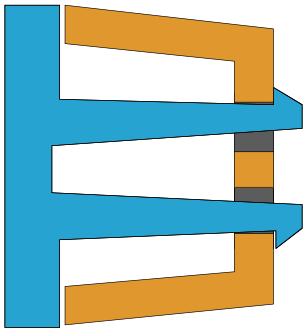
- Bonding
- Welding
- Mechanical Joining



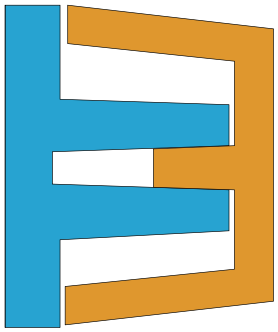
- Rivets
- Screws
- Inserts
- Molded Threads
- Press Fits
- Snap Fits

Snap-Fit Joint Benefits

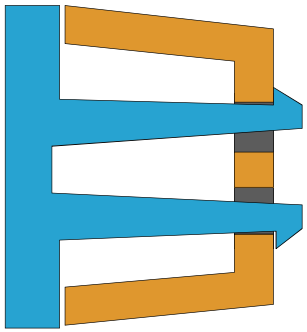
- Simple
- Economical
- Rapid
- Separable / Inseparable



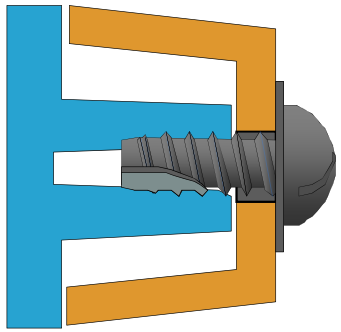
Snap Fit vs. Press Fit



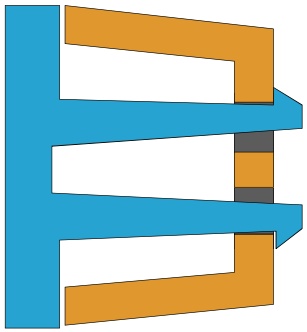
✓ Pullout Force > Insertion Force	✗ Pullout Force @ Insertion Force
✓ Constant strength	✗ Relaxation / Creep-failure
Requires undercut	✗ More demanding tolerances



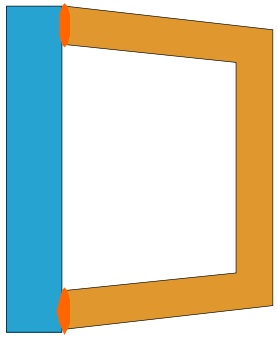
Snap Fit vs. Screws



✓ Vibration Resistant	✗ May Loosen Under Vibration
✓ Less Energy Required	✗ Requires Tightening Operation
✓ No Additional Parts Needed	✗ Requires Fastener Components



Snap Fit vs. Welding



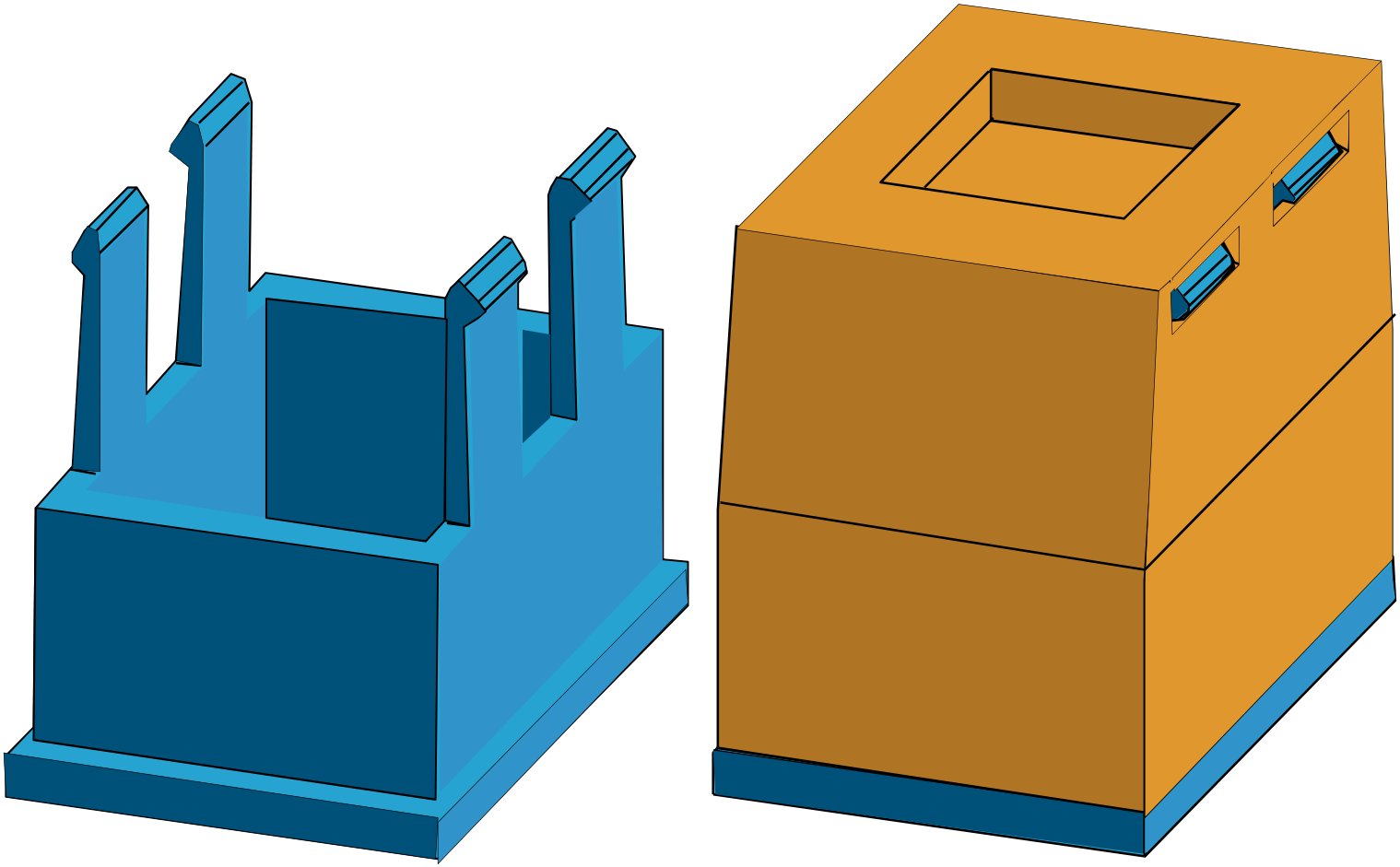
Snap Fit	Welding
✓ Dissimilar Materials	✗ Compatible Materials
✓ Integrally Molded	✗ Special Welding Equipment
✗ Hermetic Seal Difficult	✓ Hermetic Seal Easy

Snap-Fit Joint Type

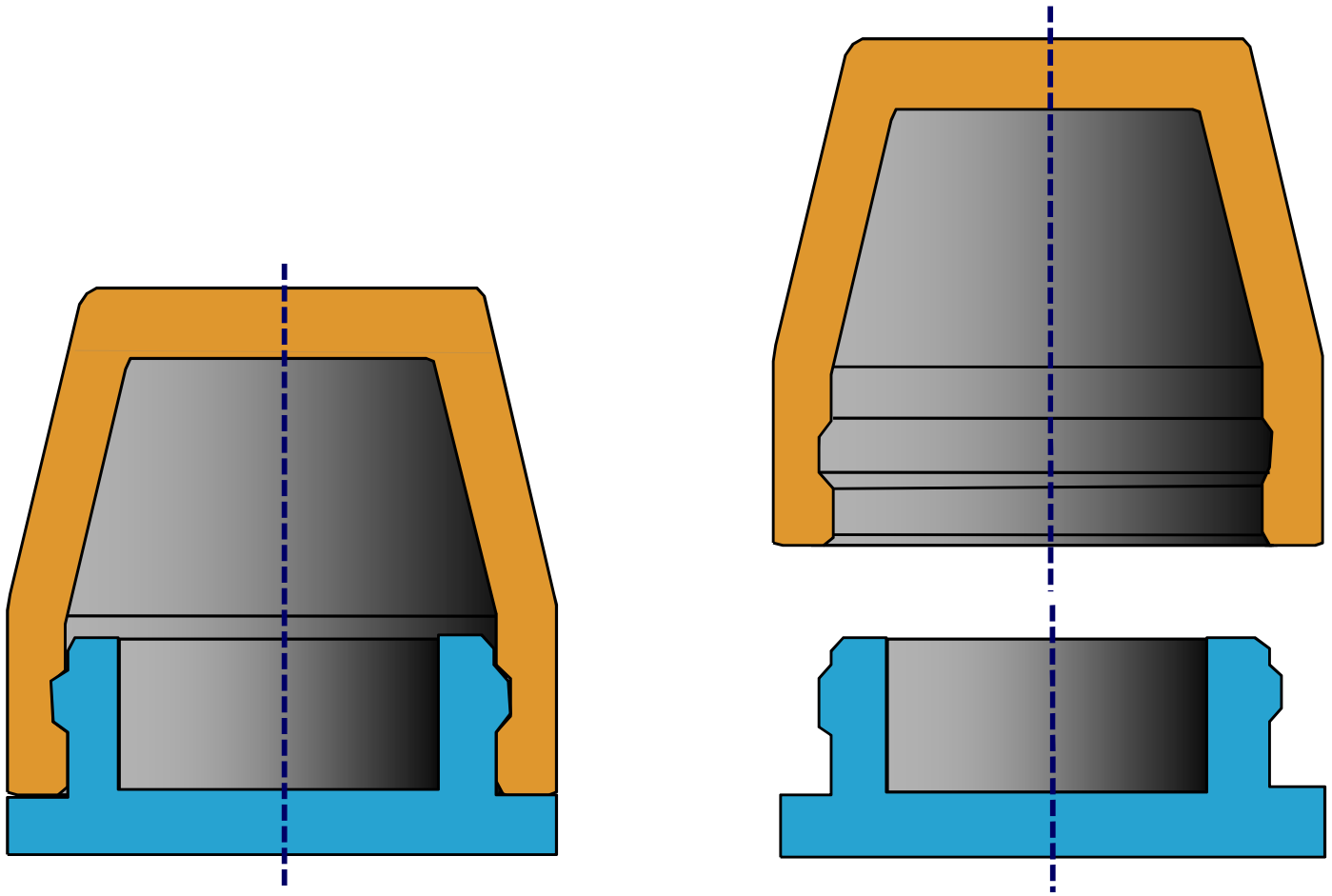
Snap-Fit Joint Types

- Cantilever
- Annular
- Torsional

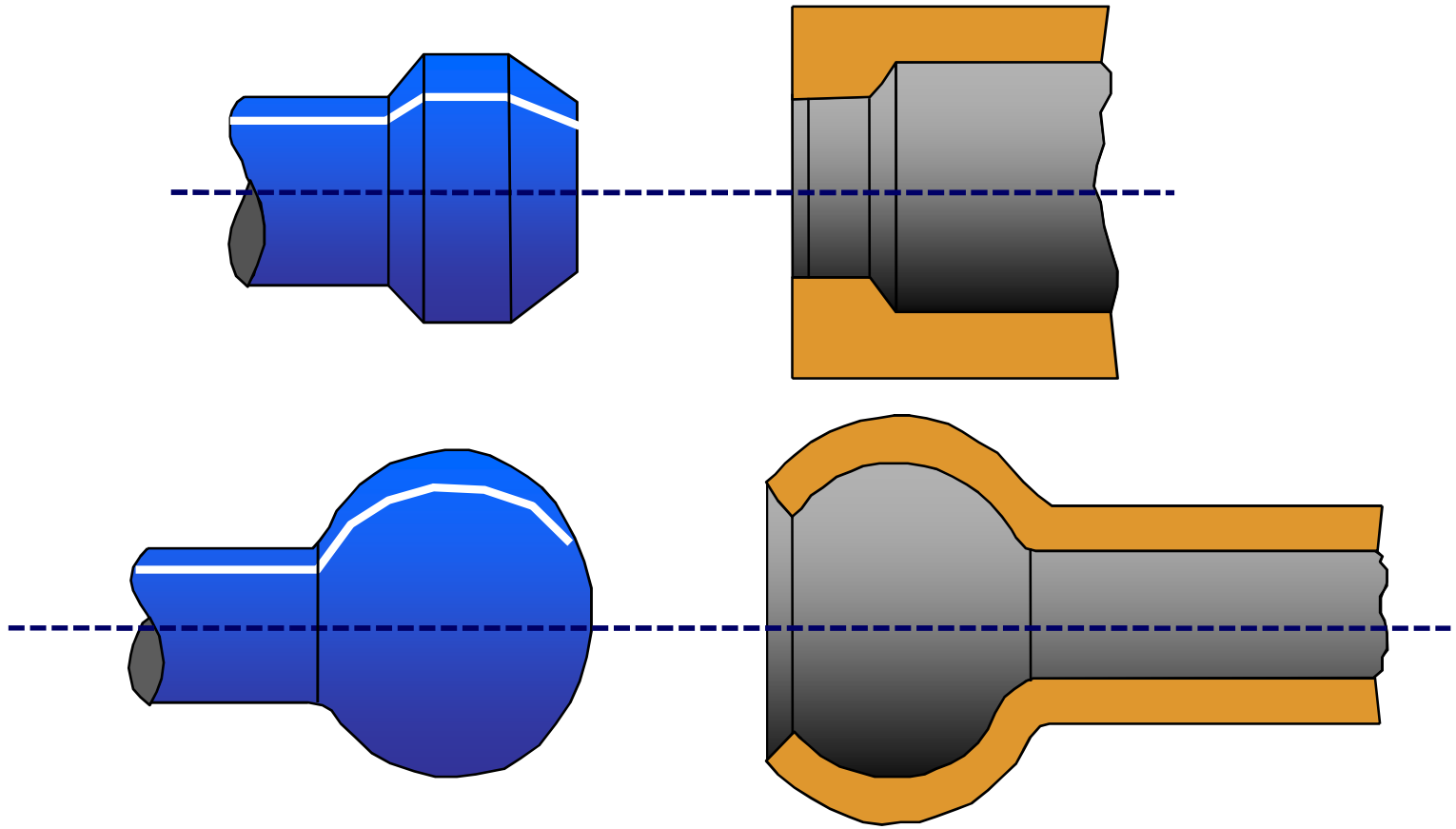
Cantilever Snap Joint



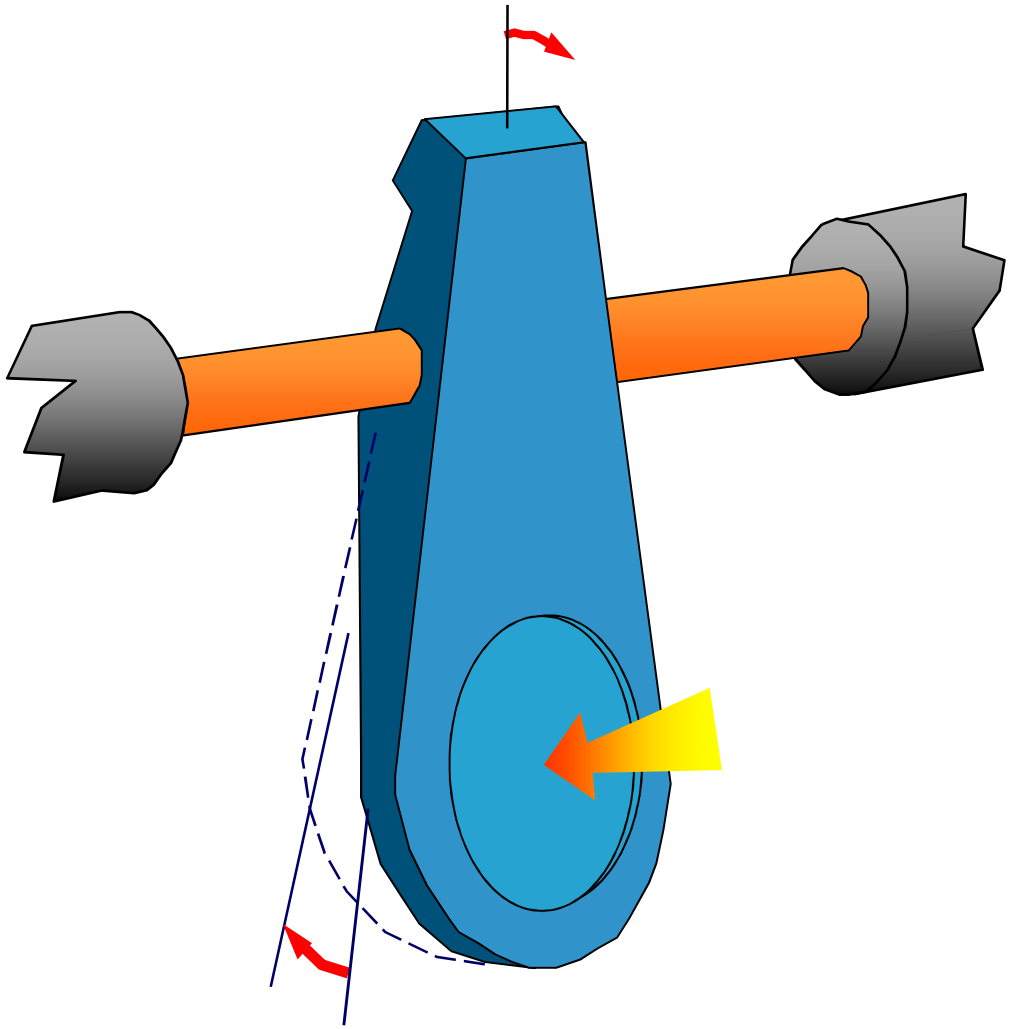
Annular Snap Joint



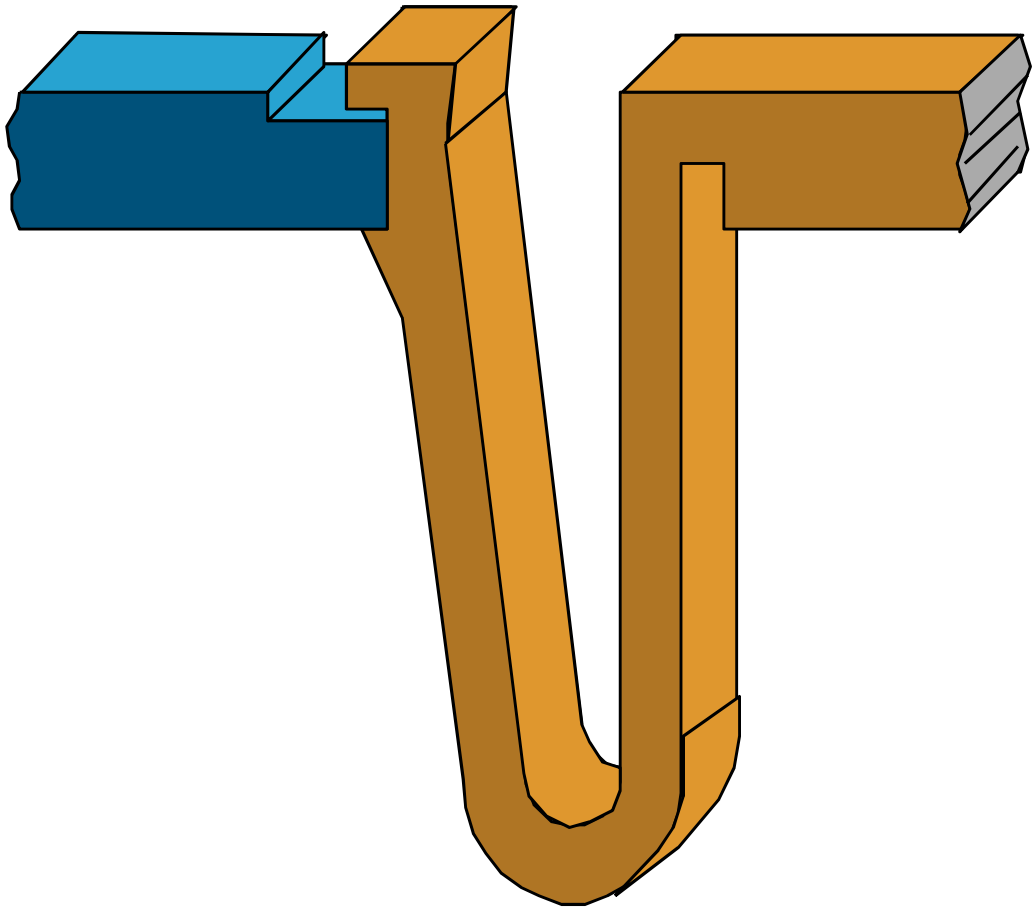
Annular Snap Joint (cont.)



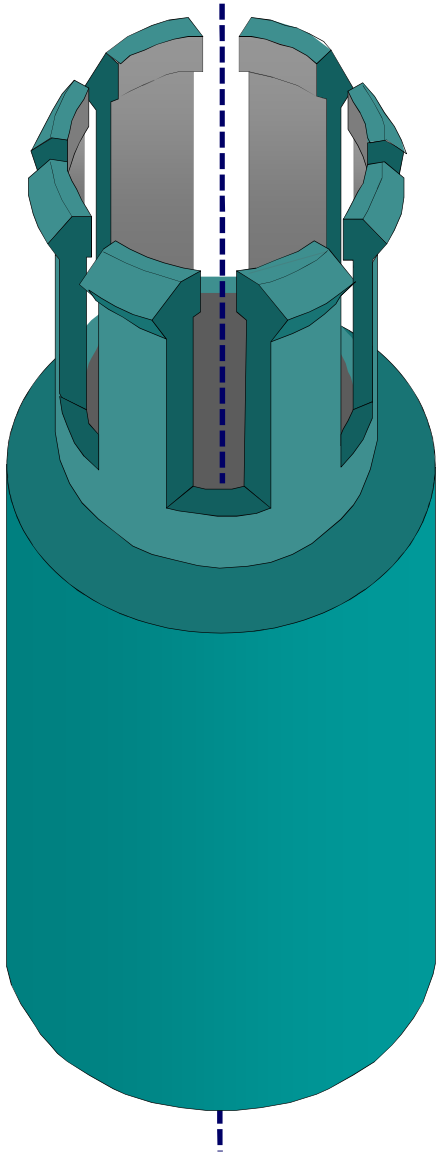
Torsional Snap Joint



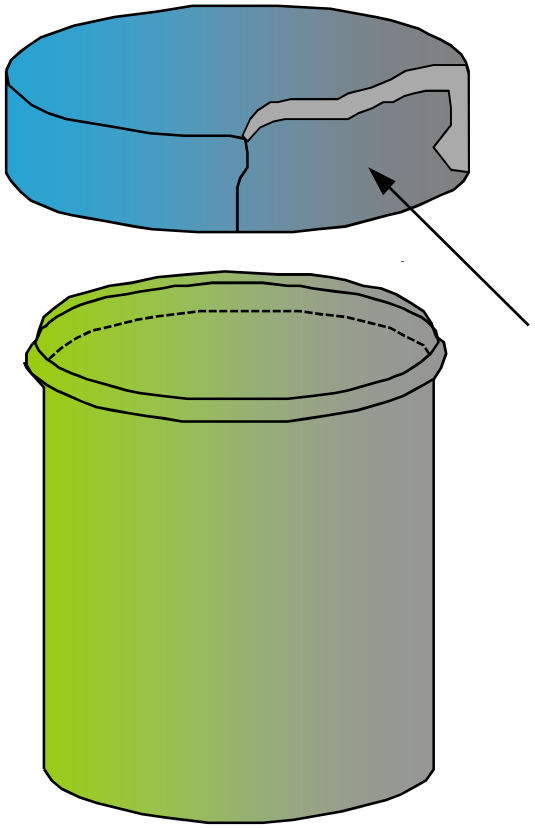
U-Shaped Snap Joint



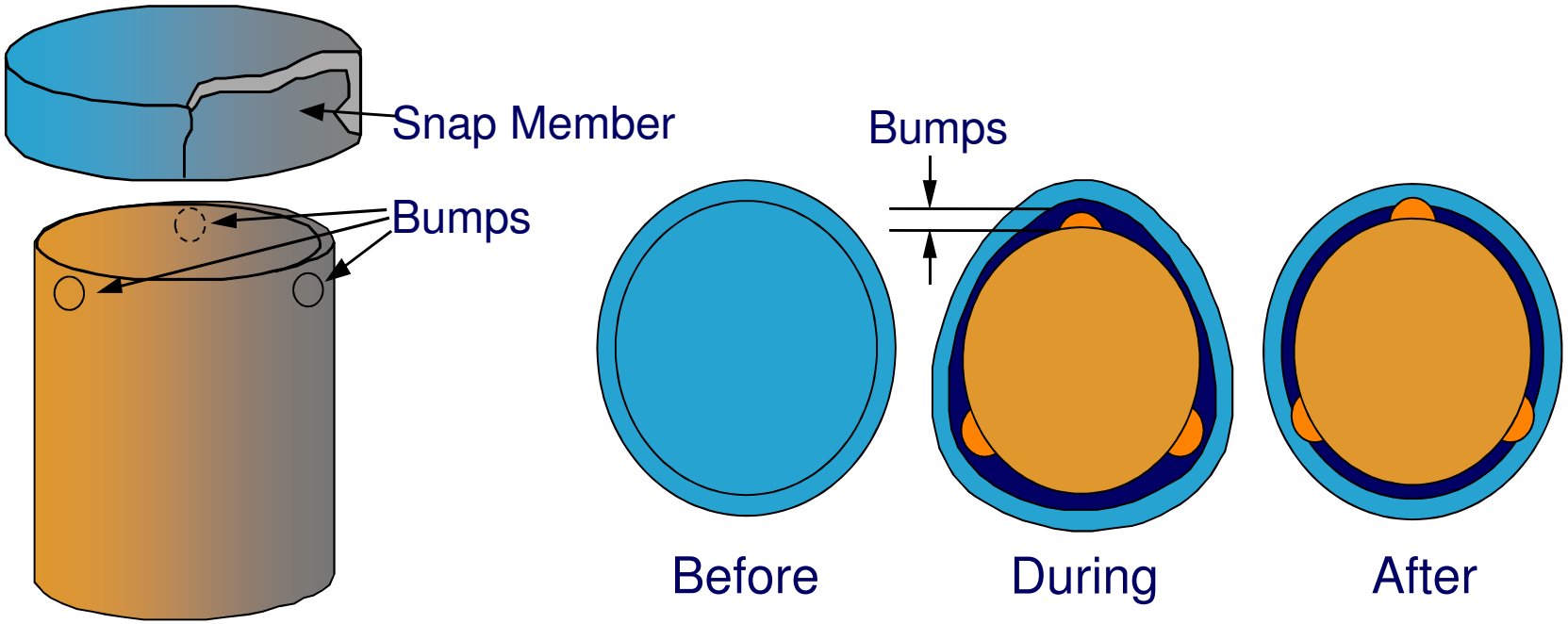
Discontinuous Annular Snap Joint



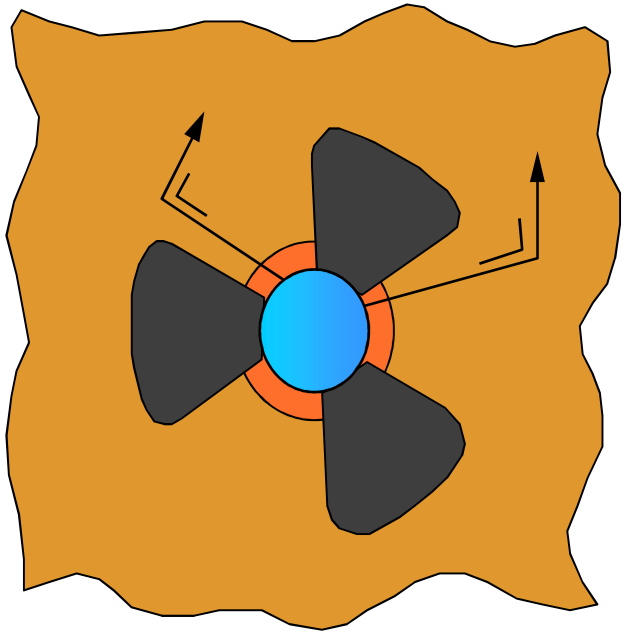
Hollow Cylinder Snap Joint



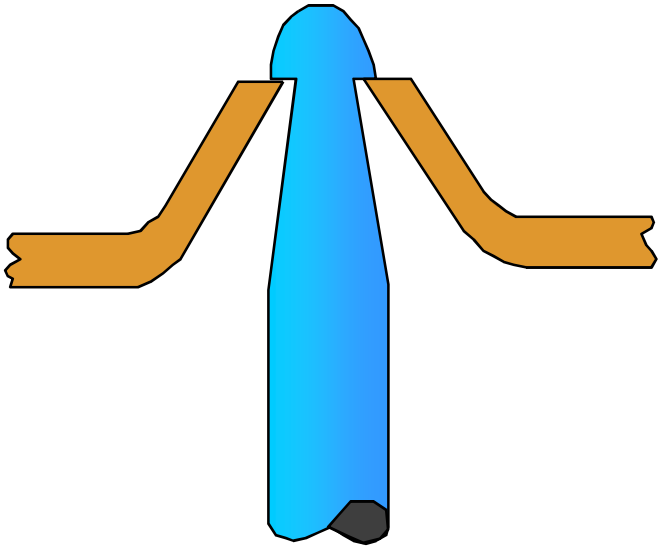
Distortion Snap Joint



Cantilever Variation Snap Joint

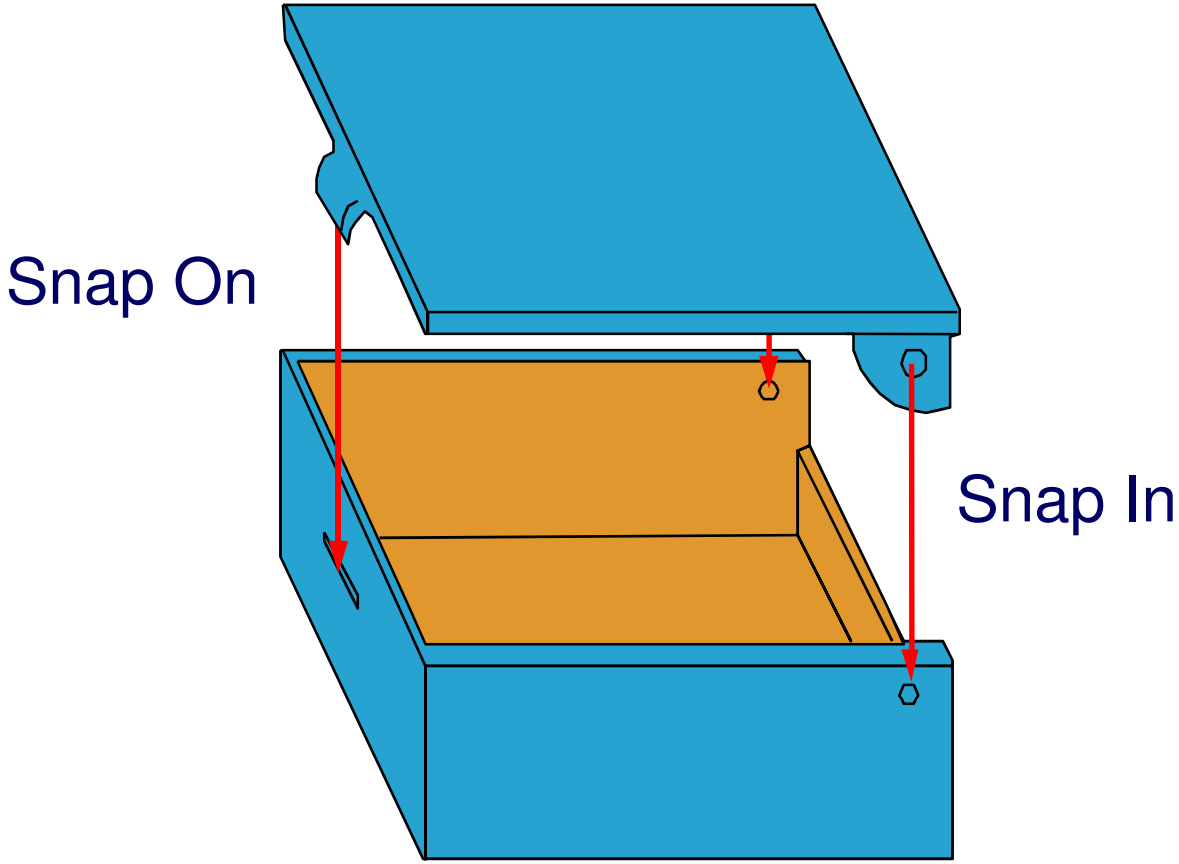


Plan View

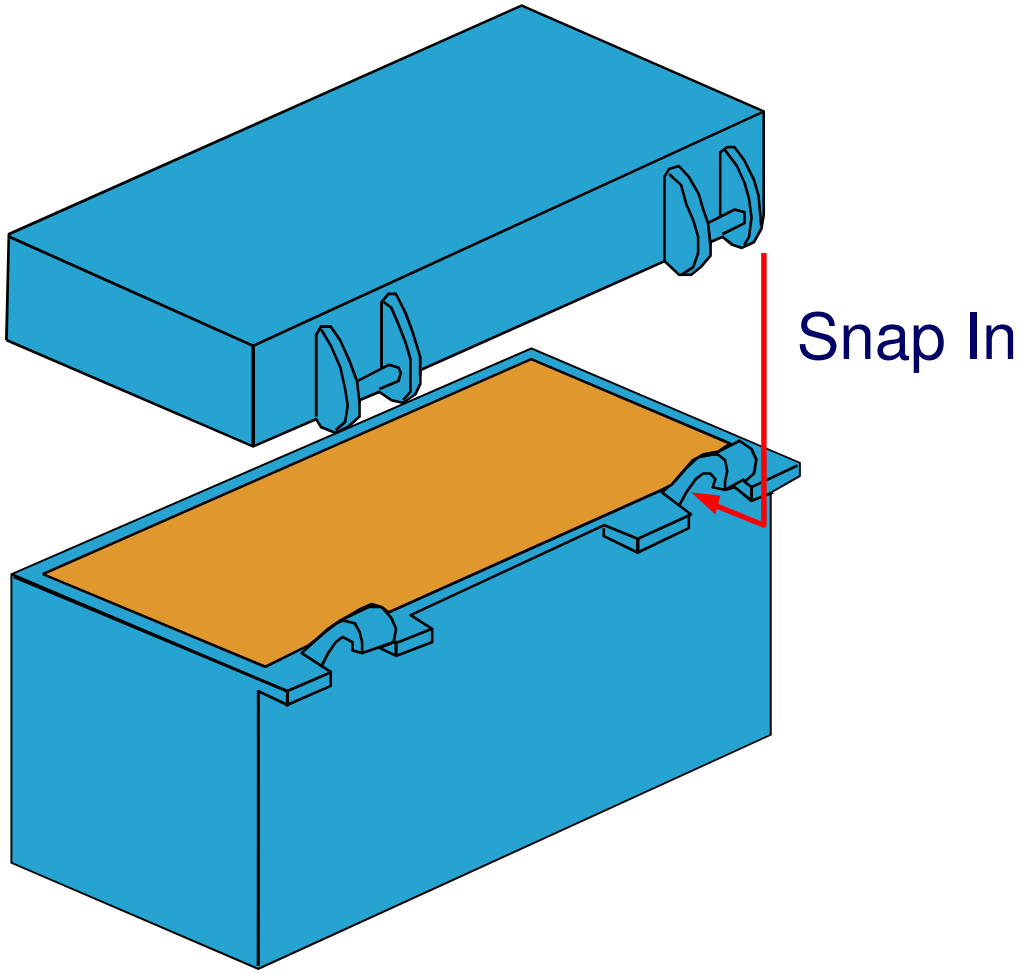


Section View

Snap Assembly Methods



No Undercut Method



Typical Applications