

Automotive Guide Tube Projectile-Assisted Nitrogen Molding

Former metal part redesigned for plastic molding

Metal-to-Plastic Redesign



Original design: Metal automotive guide tube

Redesign objective: Reduce cost through plastic molding

Part construction: No metal insert or overmolding

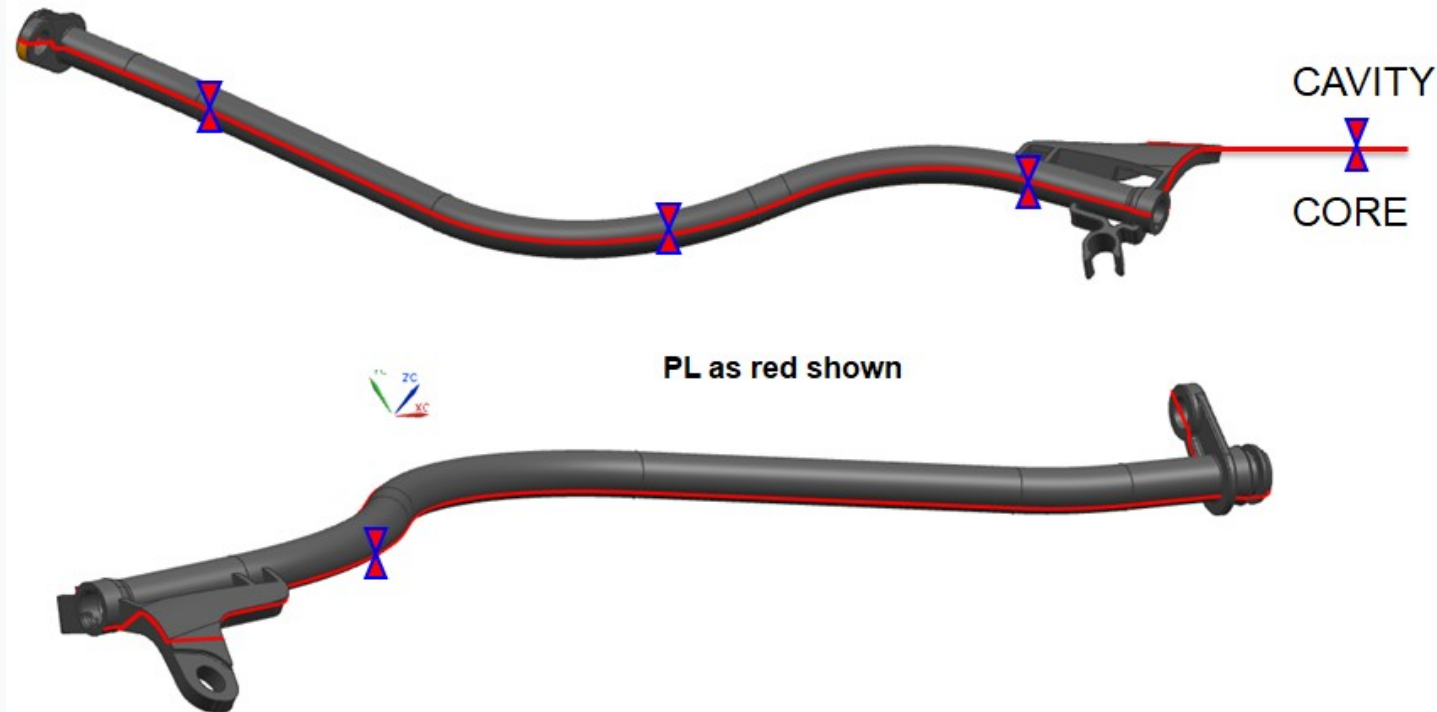
Process: Projectile-assisted nitrogen injection molding

Gate strategy: Single valve gate

Outcome: Molded plastic guide tube replaces the former metal design



Projectile Path & Hollow Section

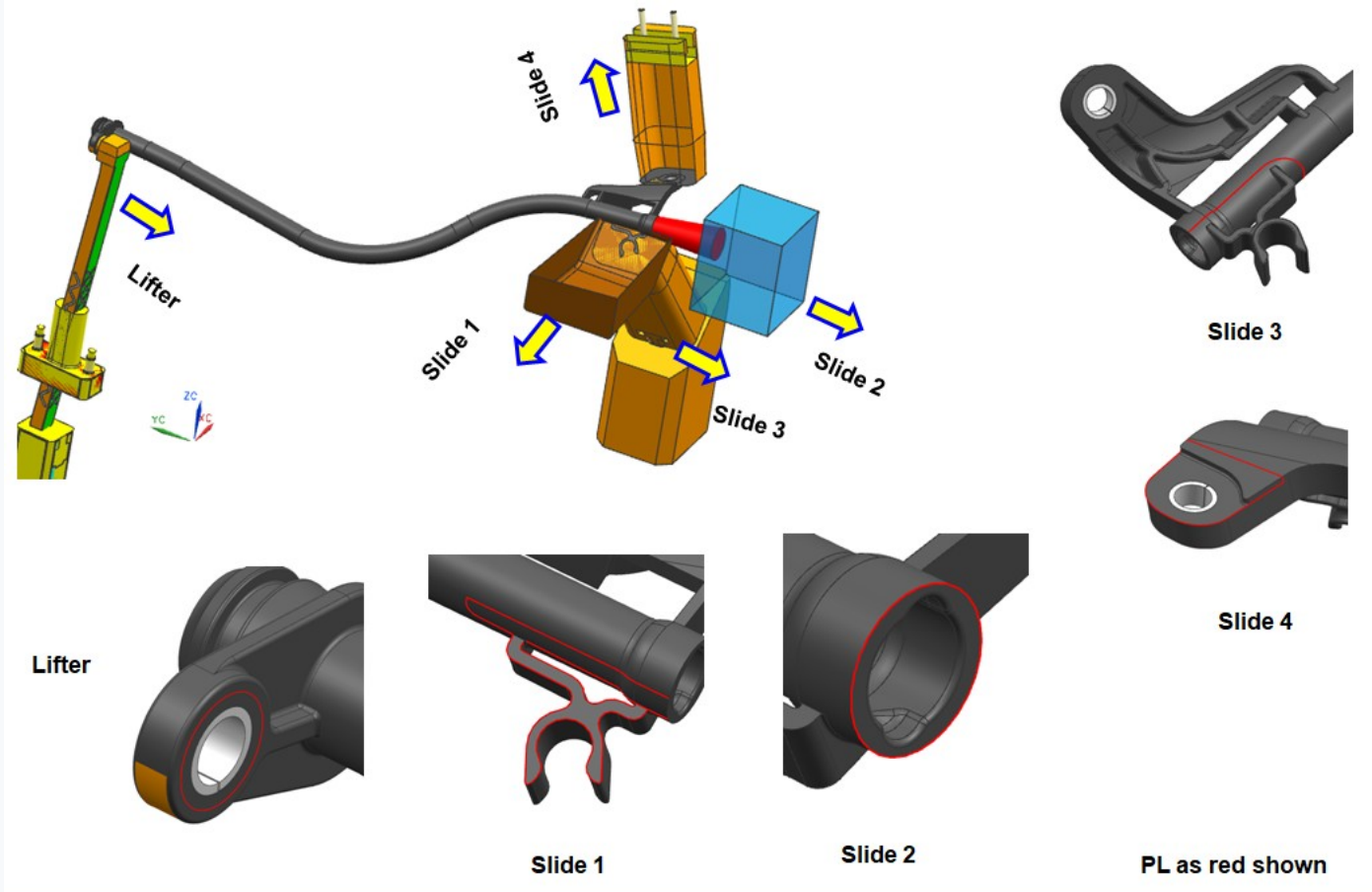


Why projectile-assisted nitrogen molding

A projectile advances with nitrogen through the curved melt path to form a continuous hollow section while the polymer is still moldable.



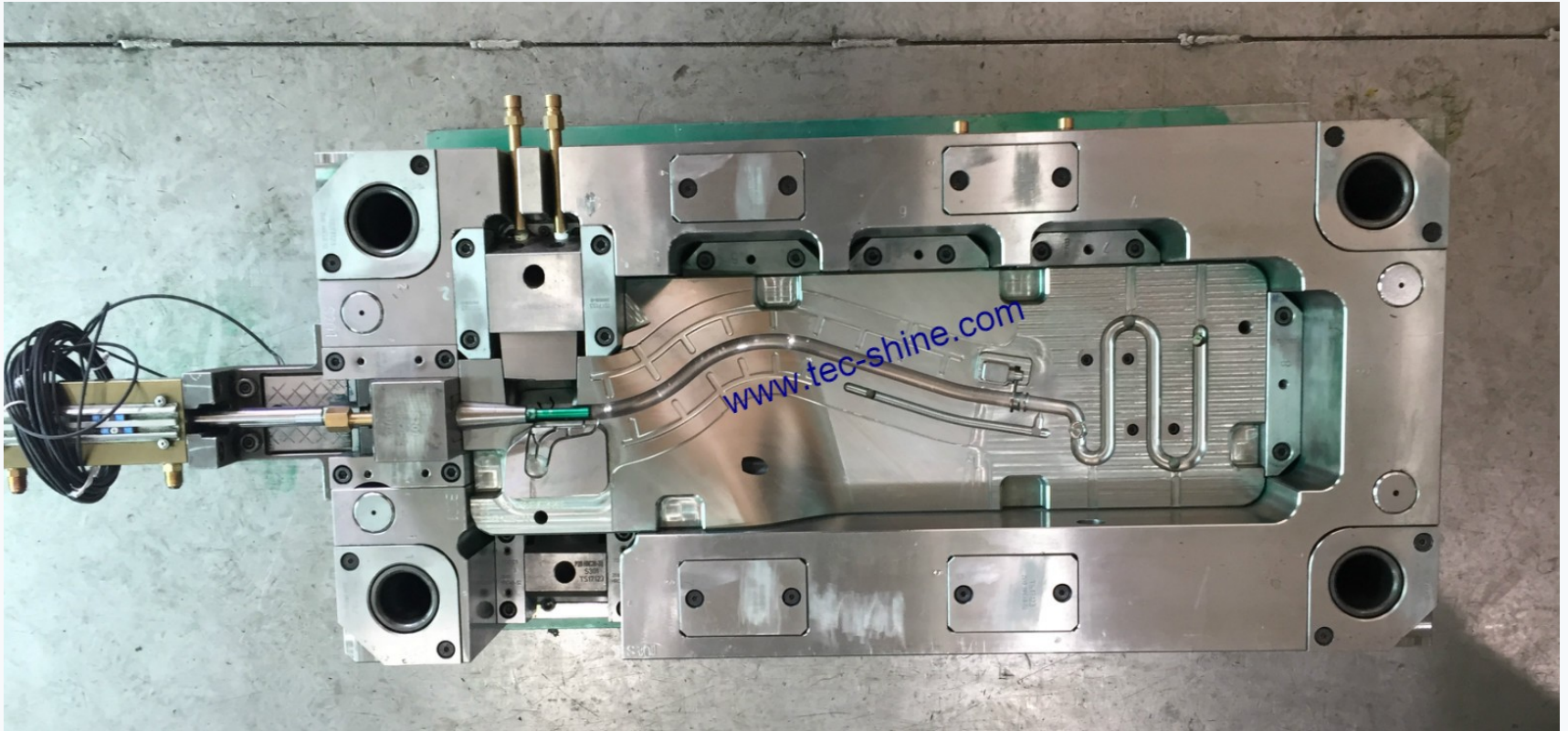
Side-Action Release Strategy



Release strategy

4 sliders + 1 lifter manage the undercuts; the parting line follows the tube profile to control flash and support stable demolding.

Cavity-Side Tooling



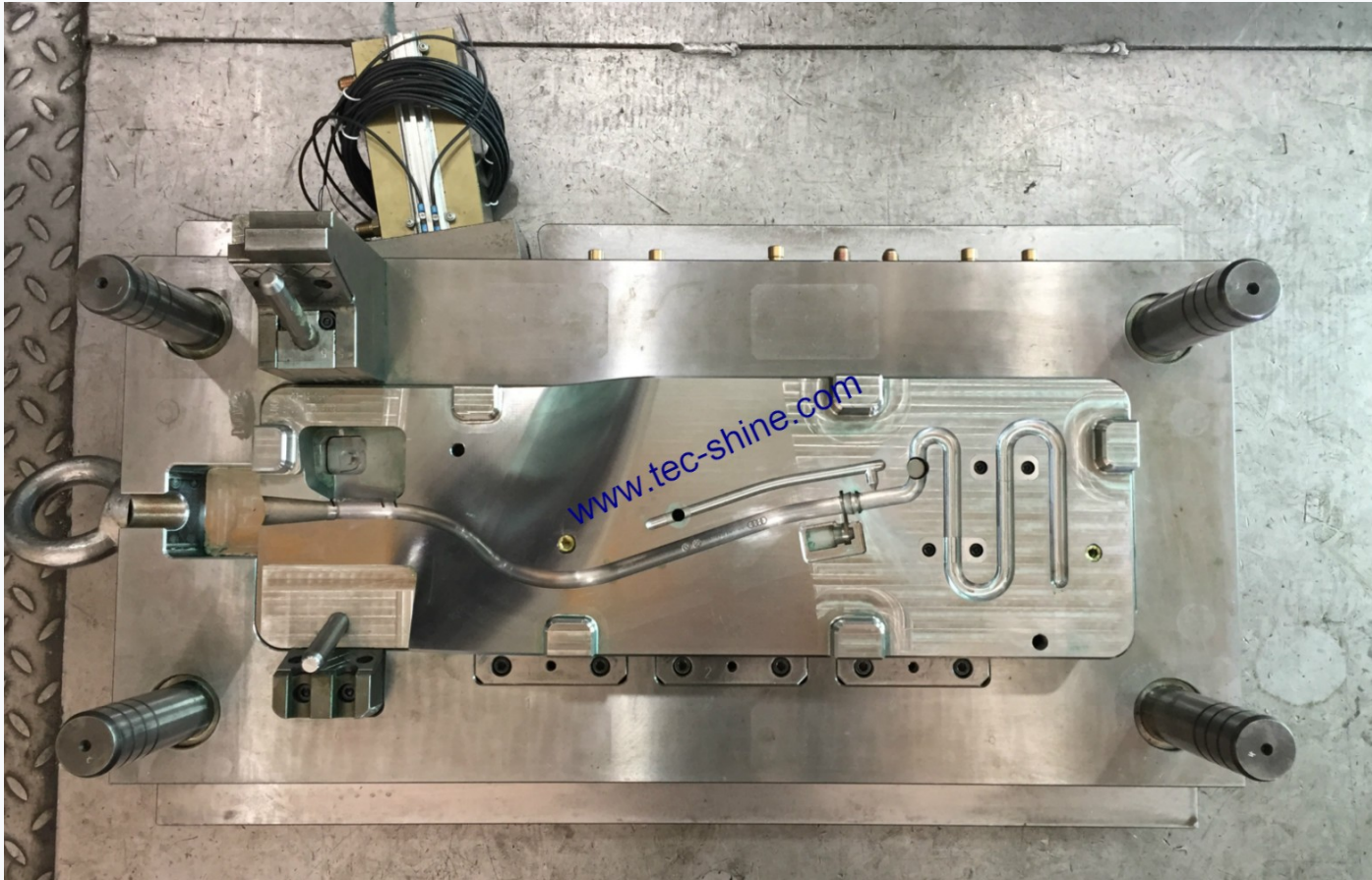
Cavity-side execution

The long curved cavity integrates the projectile and gas path with coordinated side actions around the guide-tube geometry.



Tec-Shine

Core-Side Tooling



Core-side execution

The matching half shows the curved cavity and side-action interfaces required to release the molded tube without a metal insert.



Tec-Shine

Export Crate Packaging



Export-ready protection

Protection for export transport

Protective film and internal wooden bracing secure the tool inside a wooden crate during handling and international transport.



Tec-Shine