

explosive processes in a lab/factory

Why:

Form

Cut

Calibrate

Emboss

Conformal Fits

Impact Weld

Powder Compaction

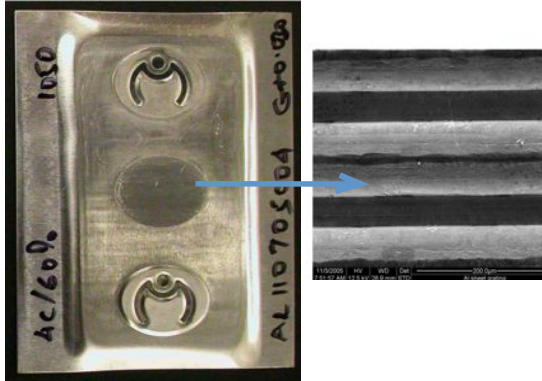
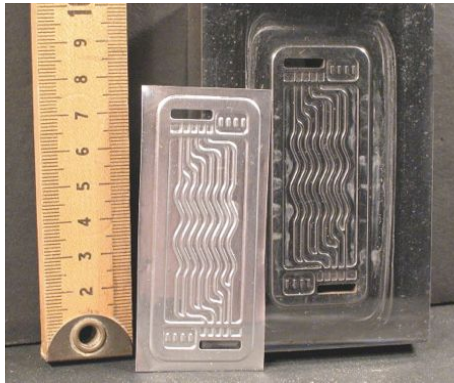
How:

Electromagnetic Forming

Vaporized foil/wire

Impulse processing (form, join, cut, weld) PROCESSES

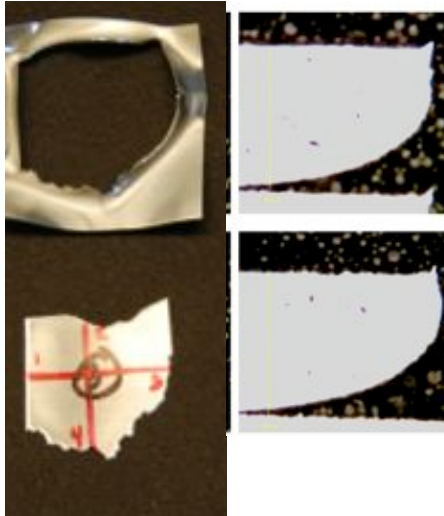
Single Die Impact cut/form



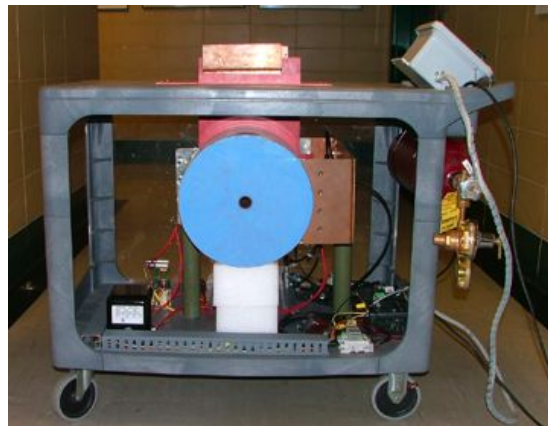
Springback Control



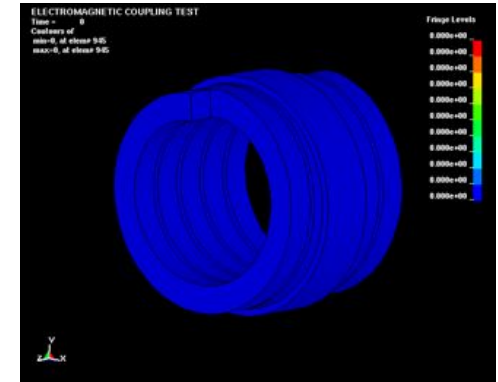
Punchless Shearing



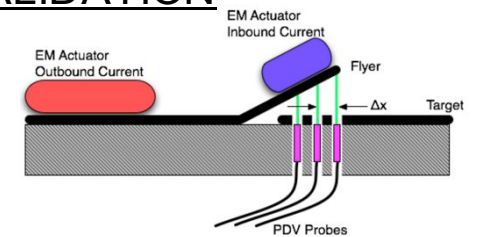
EQUIPMENT DEVELOPMENT



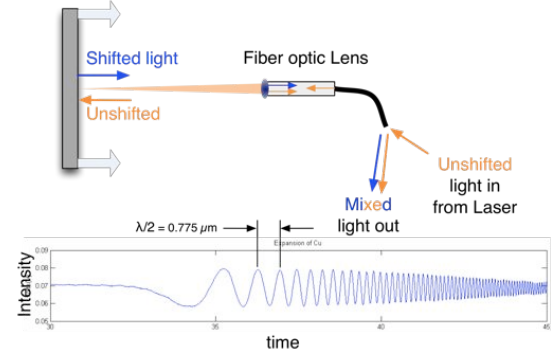
SIMULATION



VALIDATION

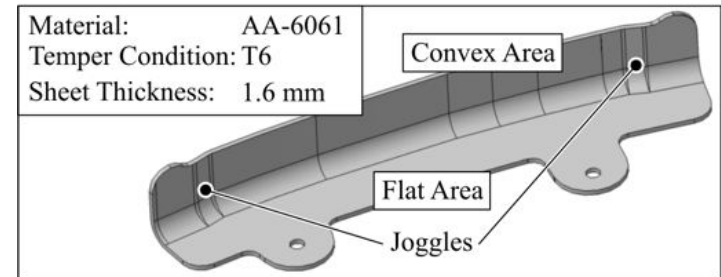
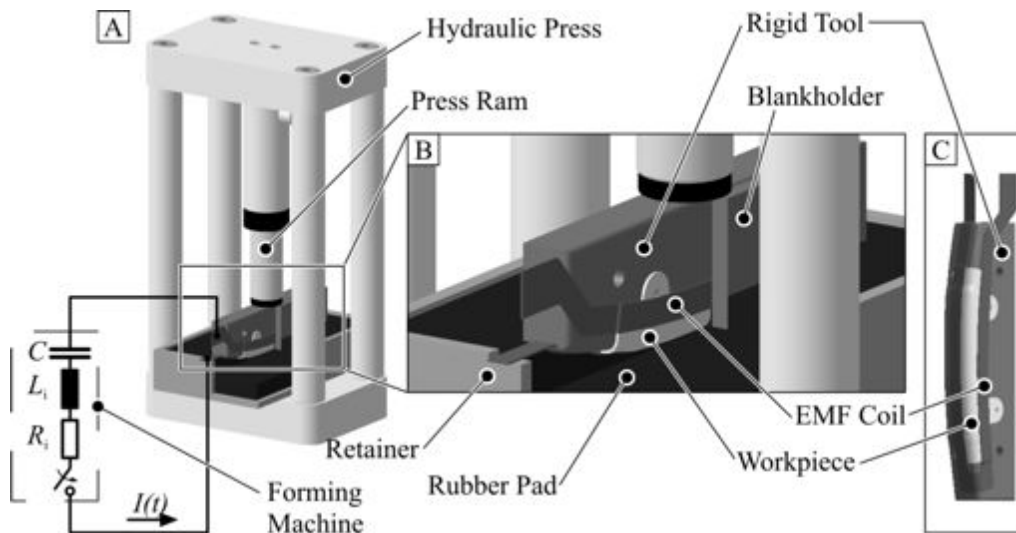


Target plate in motion



Use in metal calibration

- Commercialization of high strength direct metal forming at Cutting Dynamics
 - being commercialized for Al – moving to Ti



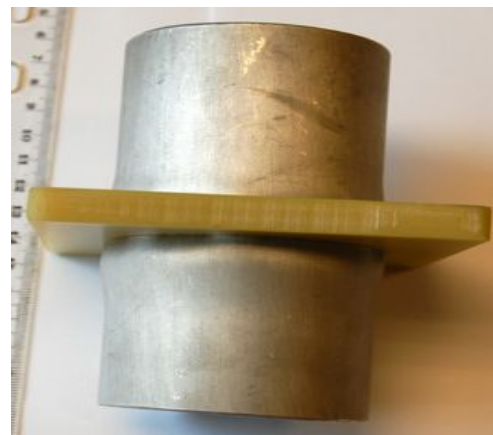
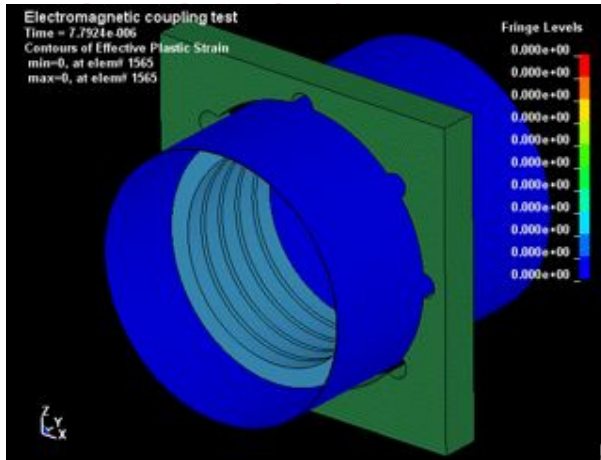
EM conformal interference joining



Solenoid Current



EM conformal interference



highly structural example



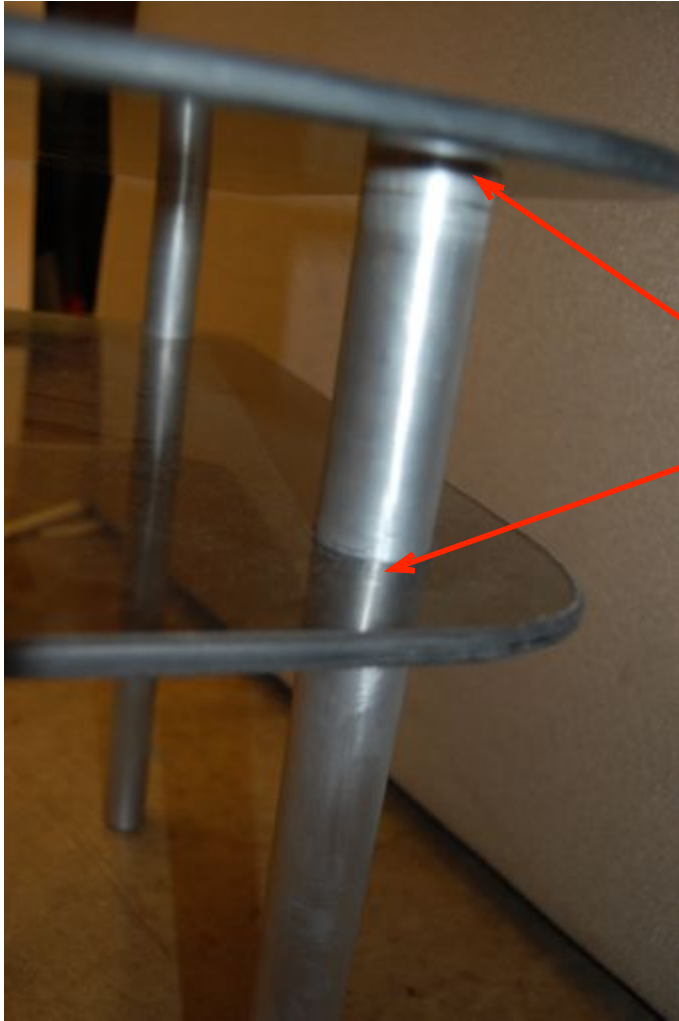
High lift torque tube for 777 and other Boeing aircraft. This design has strength of parent tube and has passed lifetime fatigue testing, eliminating inspection costs. (example from EIMag).

EM formed furniture

- Polycarbonate and aluminum
- EM expansion at joints



EM formed furniture



Expansion



- EM formed joints are virtually seamless
- Minimalist appearance

Insulated Crimp

Aluminum tube

Polycarbonate insulation

Steel core



Zero conductivity

Polycarbonate reduces corrosion