



**THETA TTS**  
PRECISION METAL FORMING

# PROGRESSIVE STAMPING

**T**heta TTS supplies the automotive industry with everything from simple parts to complex components – by the thousands and millions – with tight tolerances. For mass production of precision parts, progressive stamping offers exceptional repeatability for fast, reliable production. But we don't stop there.

Our designers and toolmakers streamline production by creating tools that reduce production steps and often eliminate expensive secondary operations. The result is finished parts, right off the press. Along with our reputation for consistent part quality and a defect rate in the single-digit ppm, this cost-efficient tooling results in even faster throughput.

## STREAMLINED PRODUCTION

Our complete production process from design through to delivery makes us your one-stop source for finished parts with tight tolerances. We design our tools and build them knowing that we will be running them in house. The result is quality tools and a process that is robust and efficient.

## FINISHED OFF THE PRESS

*This installation shaft, which is part of a timing belt tensioner, demonstrates innovative design. What used to be two separate stamped parts staked together is now produced in one die that combines three operations to produce this assembly in one process.*



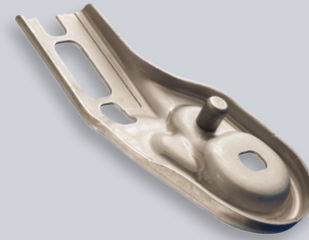
## FROM SIMPLE PARTS TO COMPLEX COMPONENTS

- 12 press lines
- press size 30-800 tonnes
- Material thickness 0.15 to 6.5 mm
- Mild, high-strength and dual phase steels; copper, brass, stainless steel
- In-die tapping
- In-die staking
- In-die bushing insertion



## PROCESS ENGINEERING

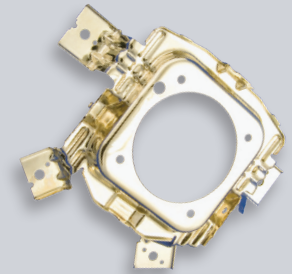
We are not just manufacturers; we are process engineers. Theta TTS develops, prototypes and builds progressive tooling for parts and components that are ready for you to install. We take care of secondary operations – often right in the press – such as in-die tapping, riveting and staking.



Seat riser with pin insertion



Bracket with Norglide bushing

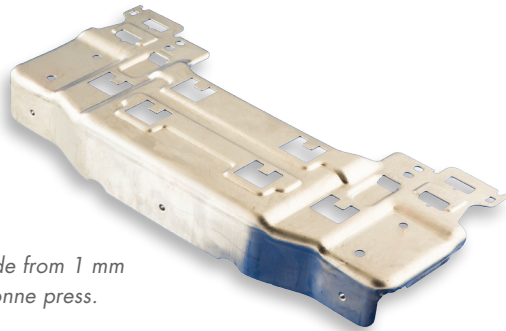


Airbag harness

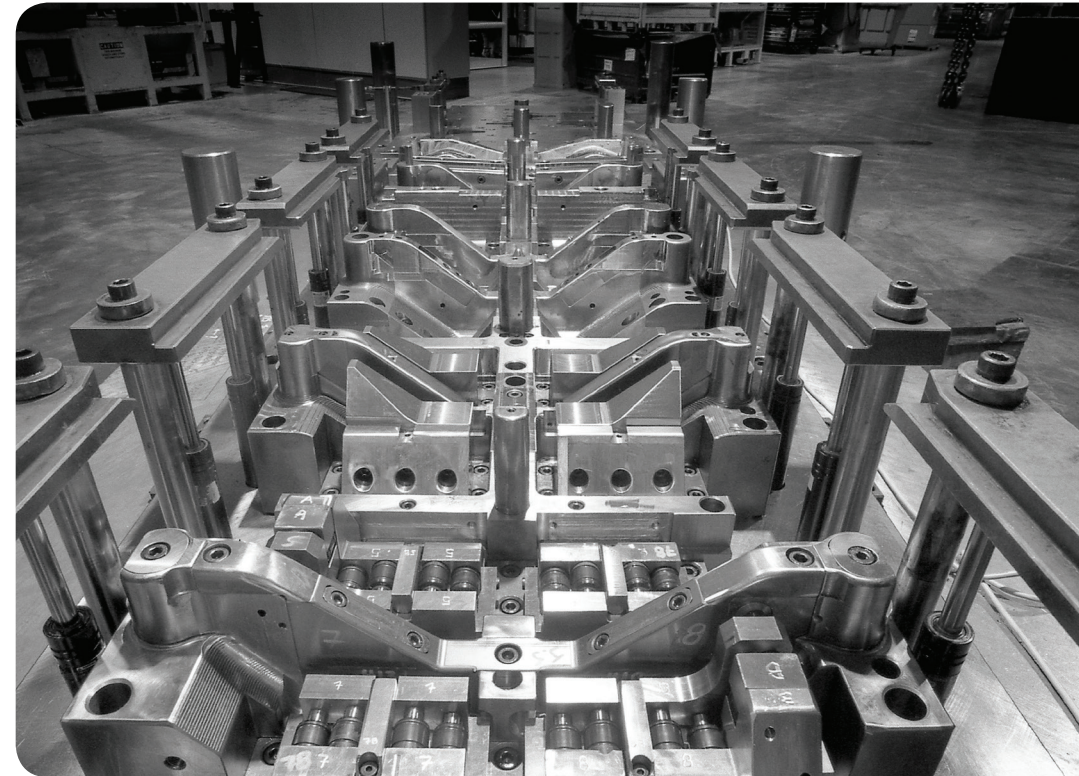
## REDEFINING PROGRESSIVE STAMPING

We take progressive stamping to a new level. We provide design expertise, precision tooling and value-added processes to deliver more – and reduce your costs. Our designers re-engineer the manufacturing process by breaking down complex challenges into simple

steps. Then our tooling experts implement the process, allowing us to deliver production solutions that would have once seemed impossible. To save you money we incorporate additional in-die processes. We're experts in making things manufacturable.



Mounting plate made from 1 mm material in a 500-tonne press.



## OUR TOOL ROOM, YOUR TOOL

Our tool room is the R&D centre of Theta TTS, where we solve your design and production challenges. It takes an iterative process of testing and refinement to make complex parts. We build the die, test it and fine-tune it until it performs exactly to our specifications.

This meticulous preparation allows us to make millions of parts with exceptional consistency.

Design, build, maintain – Your tool produces flawless parts every time.

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