



Dawson Shanahan

Precision Engineering & Cold Forming

TOOLING LIMITATIONS AND OPPORTUNITIES

“ AN EFFECTIVE TOOLING PROCESS IS ESSENTIAL TO DESIGNING AND ENGINEERING THE RIGHT TOOLS TO MANUFACTURE COMPONENTS. HOWEVER, TRADITIONAL TOOLING PROCESSES HAVE A NUMBER OF POTENTIALLY COSTLY LIMITATIONS: ”

INCONSISTENT
AND HIGH COSTS



SMALL DEFECTS INVISIBLE
TO THE HUMAN EYE



SLOW
PROTOTYPE DEVELOPMENT



ACCEPTABLE
BUT NOT
OPTIMISED
TOOLS



PROBLEM



FOR MANY YEARS MANUAL TOOLING WAS THE ONLY METHOD FOR PRODUCING THE TOOLS REQUIRED.

SOLUTION



METAL FORMING SIMULATION SOFTWARE, WHICH ALLOWS DESIGN ENGINEERS TO ANALYSE THE ENTIRE METAL FORMING PROCESS ON A COMPUTER, INSTEAD OF ON THE SHOP FLOOR USING TRIAL AND ERROR.

BENEFITS

SIMULATE



THE ENTIRE
PROCESS



IDENTIFY
PROCESS
AND DESIGN
WEAKNESSES



ENHANCE
PROCESS CONTROL
AND QUALITY



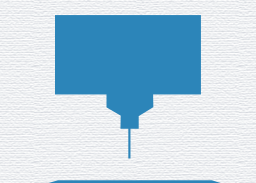
IMPROVE
PROCESS
EFFICIENCY

DEVELOP SUPERIOR
PRODUCT MICROSTRUCTURE
AND STRENGTH



SPEED UP THE
PROTOTYPING
PHASE

TOOLING SOFTWARE IN APPLICATION:



“ AT DAWSON SHANAHAN, WE PRODUCE THE TOOLS REQUIRED FOR OUR LEADING PRECISION COLD FORMING AND MACHINING SERVICES USING METAL FORMING SIMULATION SOFTWARE

DEFORM.

WE ANALYSE THE CHIP SHAPE, CUTTING FORCE, TOOL AND WORKPIECE TEMPERATURE, TOOL WEAR, RESIDUAL STRESS AND PART DISTORTION TO OPTIMISE EACH TOOL AND THEREFORE DELIVER PERFECTLY CONSTRUCTED TAILORED COMPONENTS. ”

EXAMPLE

ON A RECENT PROJECT, PRODUCING TOOLING FOR AN ELECTRIC VEHICLE PROJECT, IMPLEMENTING UPFRONT ANALYSIS USING

DEFORM

ENABLED OUR HIGHLY TRAINED ENGINEERS TO REDUCE THE PROCESS TIME BY 5.4 DAYS AND ACHIEVE AN ESTIMATED SAVING OF £3,150.



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