Italy Precision CNC Machining Inc.

Precision Engineering & Cold Forming

WHY YOUR TOOLING TAKES TOO LONG AND COSTS TOO MUCH

"HISTORICALLY, THERE HAS BEEN A GREAT DEAL OF CONFUSION OVER THE LENGTH OF TIME TOOLING TAKES, ITS COST AND THE WAY IN WHICH IT IS CHARGED TO EACH CUSTOMER. THE CHECKLIST BELOW REVEALS WHAT TO BE WARY OF IN THE TOOLING PROCESS TO ENSURE IT IS BOTH TIME AND COST EFFECTIVE."

TOOLING PROCESS CHECKLIST

☑ MANUAL TOOLING TECHNIQUES

TOOLING HAS TRADITIONALLY BEEN A MANUAL PROCESS. THE DEVELOPMENT AND SUBSEQUENT IMPROVEMENTS OF TOOLING DESIGNS BY PRECISION ENGINEERS ARE MADE THROUGH A TIME CONSUMING TRIAL AND ERROR METHOD. THE USE OF ADVANCED ENGINEERING SOFTWARE TOOLS ALLOWS TOOL DESIGN, ANALYSIS AND TESTING TO BE CARRIED OUT ON-SCREEN, RATHER THAN IN THE TOOL-ROOM. THIS SIGNIFICANTLY REDUCES THE TIME - AND THEREFORE COSTS - IT TAKES TO CREATE THE TOOLS NEEDED FOR MANUFACTURING PARTS.

☑ POOR COMPONENT DESIGN

OFTEN, THE TIME IT TAKES TO COMPLETE THE TOOLING PROCESS IS DRAGGED OUT DUE TO THE NEED TO REVIEW AND MODIFY COMPONENT DESIGNS. NOT EVEN THE BEST TOOLS CAN PRODUCE HIGH QUALITY COMPONENTS IF THE DESIGN IS FLAWED IN THE FIRST PLACE. OPTIMISING THE PART DESIGN FOR MANUFACTURE ENSURES A QUICKER TOOLING PROCESS.

☑ THE WRONG METHOD OF MANUFACTURE

SELECTING THE WRONG METHOD OF MANUFACTURING COMPONENTS CAN ALSO SLOW DOWN THE PROCESS, BUT IT ALSO RAISES COSTS IN GENERAL. OPTING FOR MILLING WHEN A PART CAN BE MANUFACTURED USING COLD FORMING, FOR EXAMPLE, IS EVIDENCE OF THIS. COLD FORMING USES LESS RAW MATERIAL AND HAS FASTER TURNAROUND TIMES, SO SELECTING THIS METHOD BEFORE TOOLING BEGINS CAN SAVE COSTS AND TIME THROUGHOUT THE ENTIRE MANUFACTURING PROCESS.

☑ THE USE OF SUBSTANDARD MACHINERY

EFFECTIVE TOOLING ALLOWS FOR HIGH QUALITY COMPONENTS TO BE MANUFACTURED. HOWEVER, PRODUCT QUALITY CAN ONLY BE ACHIEVED IF THE MACHINERY USED IS OF THE REQUIRED STANDARD. IF IT ISN'T, ENGINEERS MAY BE FORCED TO GO BACK TO THE TOOLING STAGE IN AN EFFORT TO IMPROVE FACTORS SUCH AS PART TOLERANCE, MECHANICAL STRENGTH AND RIGIDITY - THIS WILL INCREASE THE TIME AND COSTS REQUIRED TO GET THE PROCESS RIGHT.

☑ FAILURE TO AGREE TOOLING COSTS BEFORE WORK BEGINS

HAVING BLIND FAITH IN A PARTNER TO COMPLETE TOOLING COST EFFECTIVELY IS A FAILURE OF THE BUYER. TO GET THE BEST DEAL AND STOP COSTS SOARING, BUYERS SHOULD WORK ALONGSIDE THEIR PRECISION ENGINEERING PARTNER TO REVIEW AND AGREE THE COSTS OF TOOLING PRIOR TO THE START OF THE PROJECT.

"IT'S A COMMON MISCONCEPTION THAT TOOLING IS A LENGTHY AND EXPENSIVE PROCESS. IN REALITY, MODERN ENGINEERING TECHNIQUES MEAN THAT MOST CONVENTIONAL TOOLING COSTS FOR MACHINING AND COLD FORMING ARE RELATIVELY LOW AND TURNAROUND TIMES ARE SHORT. AVOIDING THE REASONS OUTLINED ABOVE WILL HELP BUYERS GO A LONG WAY IN KEEPING COSTS UNDER CONTROL AND TOOLING TIMES TO A MINIMUM."

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