

CASE STUDY

DIE CAST AUTOMATED INSPECTION

A large Midwest Die Cast customer eliminated a labor intensive and time-consuming quality inspection product to create efficiencies and deliver 100% inspected parts.

HIGHLIGHTS

Industry

Automotive

Initial Process

Manually Inspected or CMM Inspection

Inspection Challenges

Extremely Tight Tolerances – Stepped Bores; Diameter Checks – Stepped Bores; Repeatability of Inspection Correlation to CMM data

Inspection Technology

Mahr Air Gage
TruPosition® Probe
LVDT's

Repeatability and Reproducibility

< 10% on all features – tolerances from 0.03mm to 1.00mm

CHALLENGE

A global leader in automotive die-cast components was charged with delivering 100% inspected parts while maintaining profitability.

Their current process was labor intensive and time consuming – requiring either manual (hand-held air gaging) or CMM inspection.

Additional inspection challenges included extremely tight tolerances and diameter checks on stepped bores, repeatability of inspection, and correlation to CMM data.

SOLUTION

Component Engineering partnered with Mahr Metrology to design an auto gage that addressed key inspection challenges, streamlined the overall quality inspection process with a cycle time of <60 seconds.

The resulting auto gage solution integrated Mahr air gaging to provide accurate and repeatable variable data for a six (6) bore diameters.

A TruPosition® probe and LVDT's were used to check the mating surface profile and alignment hole True Position.

OUTCOMES AND BENEFITS TO OUR CUSTOMER

Improved Efficiencies – The automated inspection process eliminated the labor-intensive requirement for every part to be inspected by hand or via CMM. Also, by reducing the inspection cycle time, there is opportunity for future production expansion without incremental quality inspection cost.

Verified Quality Finished Parts – Correlation work gave our customer confidence that each part was inspected to the same criteria and standards of the traditional CMM process.

[Component Engineering](#) has been designing, building, and integrating custom quality solutions for over 20 years. Partnered with enhanced quality inspection solutions and automation technologies from [Orka Automation](#), we help customers create high performance manufacturing environments that increase efficiency, reduce risk, and deliver quality results.