

INDUSTRY: HEAVY PLANT

COMPONENT: TRACK LINK

ANNUAL PRODUCTION: 2,000,000

CUSTOMER: UNDISCLOSED

MACHINE SPINDLE: HSK100

COMPLETION DATE: OCTOBER 2011

240 ACTIVEEDGE TOOLS WERE SUPPLIED FOR THIS ORDER

Tooling Brief:

Automate the compensation of finish boring bars to hold size on track links in a ten machine cell.

± 0.050mm Drawing tolerance (varying stock and material)

Process:

The Bush and Pin bores are rough machined with a specially designed Rigibore roughing tool to remove excess varying stock.

The bush and pin bores are then individually machined with Rigibore ActiveEdge tools. The machine tracks which unique tool ID machines each of the bores.

A Renishaw probe then measures the Bush and Pin bore diameter, storing these values in the **Siemens 840D** control to correspond with the tool ID that produced the bore.

Rigibore developed a set of bespoke CNC programs that carry out SPC and trend analysis on the data from the probe.

Using the probe data the program looks for two consecutive parts, machined by the same bar, outside of a warning limit of **±0.020**. When this trend is seen the tool's cutting edge is automatically compensated back to nominal. The tool is adjusted in the carousel with no spindle downtime.

Results:

- $C_{pk} > 2.0$ (Indicative of Material Variation)
- Increased productivity with **> 90% OEE** (Overall Equipment Effectiveness)

More Information:

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