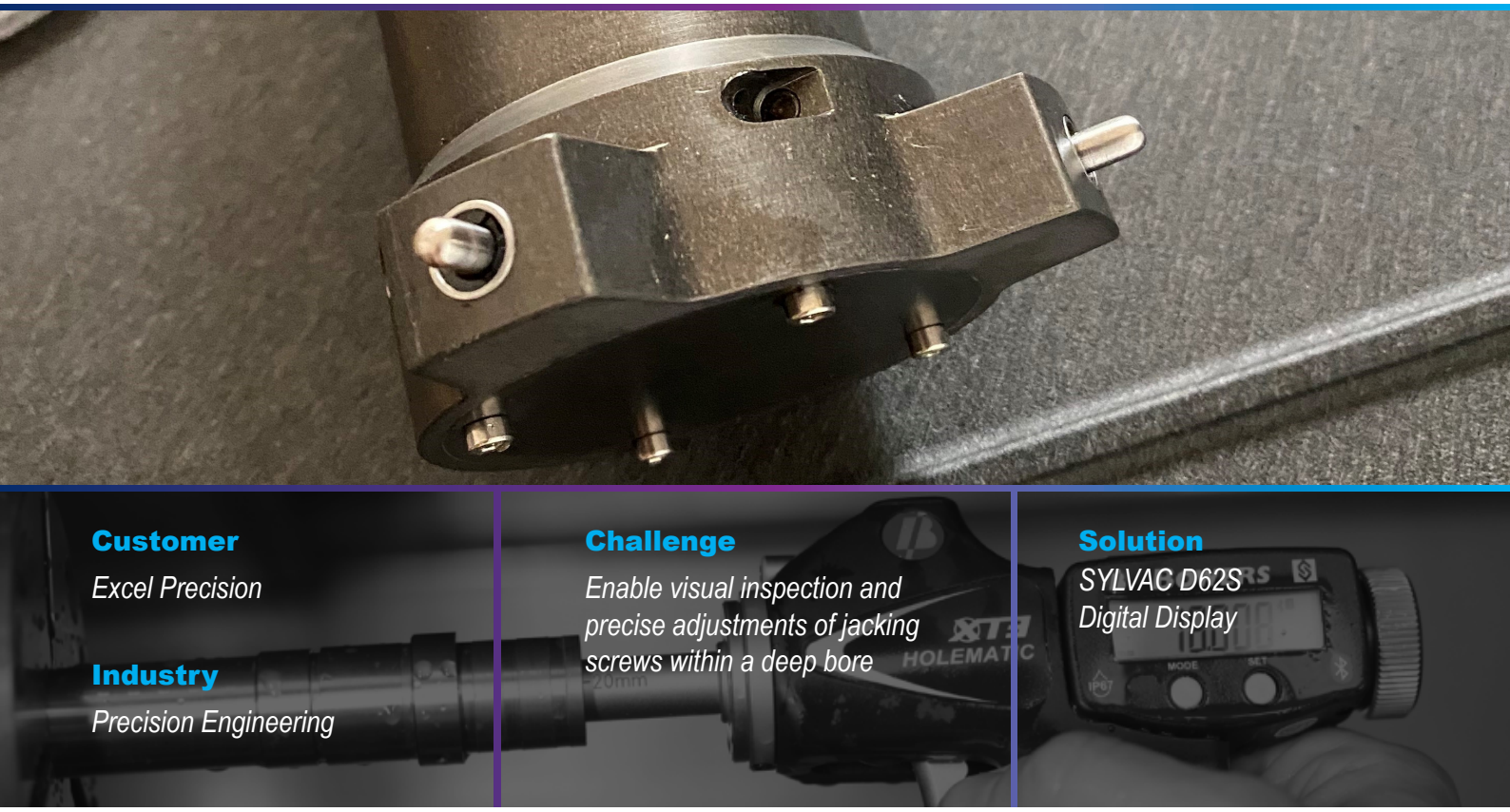
CASE STUDY

Huge Time Savings Achieved with Excel Precision's SYLVAC Solution



Customer
Excel Precision

Industry
Precision Engineering

Challenge
Enable visual inspection and precise adjustments of jacking screws within a deep bore

Solution
SYLVAC D62S Digital Display

APPLICATION BACKGROUND

Excel Precision, part of the Excel Precision Group, is the UK's leading group of EDM specialists and providing services to the Aerospace & Defence, Space, Oil & Gas, Petro-Chemical, Chemical, Nuclear, Bio-Medical, Automotive, White Goods and General Precision Engineering Industries.

Its operations are spread across three modern manufacturing facilities in Gloucester, Leeds, and Birmingham. These facilities house a range of CNC Wire and Spark Erosion machines, as well as a Tool Room and Inspection Department.

THE CHALLENGE

Excel Precision was approached by a machine tool company facing a significant challenge in its machining process. The issue centred on a bore that was embedded within a component, making it challenging for visual inspection and precise adjustments.

The initial approach involved using a conventional DTI (Dial Test Indicator) but proved inefficient, taking 5-8 days to achieve the required runout due to the inability to see the part movement during adjustment of the mechanism's jacking screws.

Excel were tasked to significantly reduce the time required for achieving precise runout within the project's necessary tight tolerance. It was also significantly important to address the visibility of the process with the client needing to access a 350mm-deep blind bore.

The initial approach involved creating a ball screw adjustment mechanism using a three-point system. This system featured one fixed point and two adjustable points to improve flexibility. Despite this enhancement, the client was still operating without visual cues on the part. As a result, the challenge of time-consuming testing persisted.

With the team having to repeatedly probe the bore horizontally, making minor adjustments until it met the desired tolerance, it quickly became apparent that having real-time visibility into the part's movement would help speed up the setup.

THE SOLUTION

After extensive research, Excel Precision turned to Bowers Group to supply the technology that would streamline adjustments and offer the much-needed visibility of part movement. The SYLVAC D62S Digital Display and PS12D Digital Probe were the ideal solution to address this need.

The SYLVAC D62S table display unit and digital P12D measuring probes offer an array of user-friendly features. With functions such as MIN/MAX/DELTA, these tools provide the versatility needed for accurate measurements. They also feature both USB and RS232 data outputs, accommodating different systems.

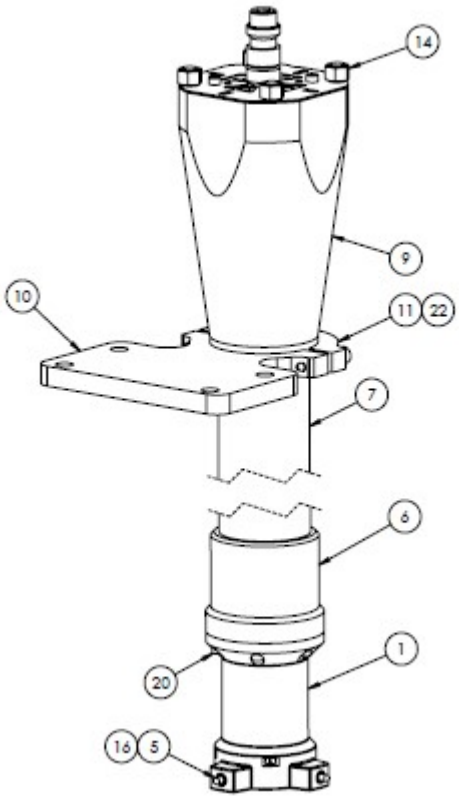
The D62S was mounted on a carbon fibre tube and a wire passed through, connecting it to the two digital probes. A mechanism was also developed that allowed one probe to take measurements in the X direction and the other in the Y direction, ensuring precision despite the tight confines of the bore. This advanced assembly allowed real-time measurement of the part's movement, enhancing precision during adjustments.

The immediate feedback made it possible to set the component within an hour, a significant improvement from the previous 5-8 days. This, coupled with the custom fixture reduced the client's production time by at least 12 weeks per year.

"Our innovative solution transformed a complex and time-consuming process into a highly efficient one."

Comment

Steve Batt, Technical Director at Excel Precision, said: “Our innovative solution transformed a complex and time-consuming process into a highly efficient one. By incorporating innovative technology from Bowers Group and smart engineering from our team here at Excel, we not only met the client’s precision requirements but also significantly increased their annual production capacity by reducing production time.”



For more information and to watch our corporate film, visit **www.bowersgroup.co.uk**

Bowers Group

Unit 3 Albany Court, Albany Park
Camberley, Surrey
GU16 7QR
United Kingdom

T +44 870 850 90 50
E sales@bowersgroup.co.uk
www.bowersgroup.co.uk