

PROJECT REPORT

Centering device for drilling job



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Optimization of processes for economical series production

Time and costs play a decisive role in industrial manufacturing. In order to be able to process a larger drilling job competitively, LILA has developed a special device and had it custom-made by a partner company. The throughput times could thus be reduced to a quarter.

Flanged discs made of stainless steel are to be processed for the customer order. The lot size per batch is 15 000 pieces. The round workpiece, the size of a 10 cent piece, is provided with a 2mm deep blind hole, into which a hole with a diameter of 0.3 mm must be drilled.

In order for this difficult work step to be carried out professionally and in an efficient manner, a special work fixture had to be developed and manufactured.



Figure 2: Placing of workpieces on the holder



Figure 1: Centering device with workpiece tray



Figure 3: Positioning of workpieces on the holder

A centering device tailored to the special production situation at LILA was built in cooperation with HIN Feinmechanik from Waldkirch. The parts to be machined are placed on a workpiece carrier and fixed by means of a magnet.

If one side of the workpiece carrier is loaded with ten workpieces, a mechanical centering process takes place. The carrier is then turned and another ten workpieces can be placed and positioned for processing.

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The workpiece tray is now placed on a holder in the laser system and the actual machining process can begin. This procedure reduces

the processing time to a quarter and also reduces the manufacturing costs considerably.



Figure 4: Centering of workpieces for machining



Figure 5: Drilling in the laser system

Figure 6: Laser precision machining in production

