



Acoustic Drilling

Unequaled drilling quality and productivity



Context

Jet engines are subjected to very strict standards to gradually reduce their noise levels. To achieve these goals, they contain composite parts with hundreds of thousands of small-diameter holes (generally 1 to 1.8mm), which act as "sound traps" .

Acoustic drilling solution on robot

To respond to these very demanding quality and productivity criteria, Le Créneau Industriel has developed a solution over the last 15 years known as "acoustic drilling" with 5-axis machines. This combined "machine/process" approach provides unequaled drilling quality and productivity (up to 28 holes in less than a second), which has been adopted by the majority of the major players in the world aeronautics industry for this type of drilling (large parts and/or high-volume output).

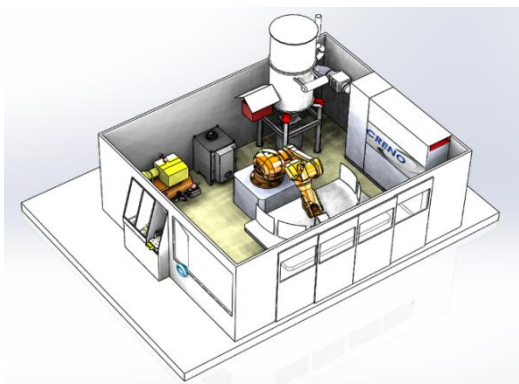


1,2 mm diam. hole, zoomed in x35.

More recently, Le Créneau Industriel developed an acoustic drilling solution using a Stäubli robot controlled by a Siemens NC which, due to its great flexibility, is perfectly adapted for drilling small parts and/or lower volume output.

This solution offers:

- Complete supervision of the process for each drilling sequence
- Unequaled flexibility resulting from the design of the multi-spindle heads and the use of a robot
- Perfect control of drilling depth, essential for sandwich panels
- A wide range of drilling diameters (0.5 to 2.0mm)



Example of implantation

PRECISION MACHINING SOLUTIONS

Le Créneau Industriel

Why use robots rather than traditional machining centers?

- Greater flexibility (combination of machining and a diversity of other operations)
- Ease of integration in industrial workflows (inline integration)
- Reduction by half of required floorspace, with easier installation and simplified civil engineering
- Increased displacement speed of up to 50%
- Easier access to the machining area
- Ease of maintenance and worldwide after-sales service provided by the robot manufacturer.

Why control a robot in a numerical command environment?

- Human/Machine Interface with familiar workflow and programming (Cartesian mode and ISO code)
- Offline programming (including simulation) replacing demanding time-consuming iterative learning carried out on the robot itself,
- Benefits for all standard machining functions of a NC (tool management, probe cycles, trajectory control, etc.)
- Easy integration into numerical industrial workflows
- Totally integrated management of additional axes in the NC (orientation of ultrasonic knife, working table axis, effector axes, etc.)



Le Créneau Industriel, always one step ahead

Providing pioneering turnkey machining systems for complex processes since 1978, Le Créneau Industriel offers worldwide innovative and robust solutions on multi-axis machine and robot. Its mission is to guarantee its customers to stay one step ahead of their competitors with a customized machine/process combination, its reliability and integration into physical and numerical industrial workflows.

A GLOBAL PRESENCE

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