



TECHNOLOGY>EMERGING TECHNOLOGY

# AV&R Aerospace Launches New Robotic Blade Polishing Solution

The company says the solution will bring the benefits of robotic consistency without requiring robotic programming knowledge.

[Lindsay Bjerregaard](#) | Jan 30, 2018

AV&R Aerospace has just commercially launched its new robotic solution for polishing gas turbine blades to improve aerodynamic efficiency. The solution, which was developed over three years of beta testing, robotically polishes a gas

turbine blade's foil, platform and fillet radius according to a customer's tolerances and surface finish requirements.

According to Éric Beauregard, Executive VP, AV&R Aerospace, the need for consistency in polishing is crucial thanks to more tightly shaped blade tolerances on new, high-efficiency aircraft engines such as the LEAP and geared turbofan. "OEMs are looking to eliminate manual benching as soon as possible," says Beauregard. "If a human polishes too hard, they could scratch something on the blade."



In addition to higher levels of consistency, the robotic polishing solution offers repeatability, time savings and quality assurance through combining automated inspection and validation within the same system. The robot's programming was developed through AV&R Aerospace's BrainWave software, which allows operators without robotics expertise to program and fine tune parameters and

parts. Beauregard says the system has an advantage over competitors' systems, which leave customers dependent on the robot integrator or robotics experts for programming. "It allows a plug-and-play approach," says Beauregard. "It's a tool that has simplified the life of the programmers and the users."

According to Beauregard, the commercial launch is the first step in mastering efficiency and consistency of removing a fixed amount of material from gas turbine blades in a controlled environment. He says the next big step for AV&R Aerospace, scheduled for next fall, is to be adaptive. This will entail adapting the recipe for each part to eliminate variations in the process and account for wear and tear on forging and machining equipment. "When you have a blade come in, you measure and you adapt your recipe. The recipe will always change part to part," says Beauregard. "Our goal is to adapt to each part."

Two major engine OEMs have already signed up for the robotic polishing solution and Beauregard says AV&R Aerospace will be looking to develop a similar solution to automate deburring on jet engine blades.

## 【行业动态】AV & R推出基于机器人的新型航空发动机叶片抛光解决方案

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**导读：**该公司表示，该航空发动机叶片抛光机器人解决方案不仅可以带来一致性的好处，而不需要机器人编程知识。



近日，AV & R 航空航天公司推出了用于航空发动机叶片抛光的新型机器人解决方案，能够提高叶片的气动效率。该解决方案已经经过三年的beta测试，可以根据客户的公差和表面光洁度要求，自动抛光航空发动机叶片的叶形、凸台和圆角半径。

根据AV & R航空航天公司执行副总裁Éric Beauregard的说法，由于新型高效率航空发动机（如LEAP和齿轮涡扇发动机）的叶片公差更严格，所以抛光一致性的要求至关重要。

Beauregard说：“OEM制造商正在寻求尽快消除手动抛光，如果一个人在抛光上过于用力，则他们可能会刮伤叶刀片的表面。”

除了更高的一致性，机器人抛光解决方案还结合了自动化检测和验证功能，从而节省了时间，并加强了质量保障。该机器人的编程时通过AV & R航空航天公司的BrainWave软件开发的，该软件允许没有机器人专业知识的操作员对参数和零件进行编程和微调。



Beauregard表示，该系统比竞争对手的系统更具优势，以前的叶片抛光系统过于依赖机器人集成商或机器人技术专家进行编程，“而我们的系统允许即插即用的方法，这是一个简化程序员和用户生活的工具。”  
Beauregard补充道。

根据Beauregard的说法，目前发布的商业版本可以帮助客户掌握在受控环境中，去除航空发动机叶片上固定的材料，并保证效率和一致性。AV & R航空航天公司的下一步是计划在明年秋天取得适应性方面的突破。这

将需要调整每个零件的配方，以消除工艺变化，并考虑到锻造和加工设备的磨损。

Beauregard表示：“当放入一个航空发动机叶片后，该系统会自动测量，并选择适应性的抛光方案。我们的目标是该系统能够适应每一个叶片。”

目前，已经有两家主要的航空发动机制造商签署了机器人抛光解决方案，Beauregard表示，AV & R航空公司还将研发类似的解决方案来自动去除航空发动机叶片上的毛刺。

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