



New Level in Robotics for the Orthopaedic Industry: AV&R Launches Its Robotic Systems for Implants Production

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Surgical robots first appeared in the orthopaedic field many years ago and have developed substantially. But did you know that robotics also contributes to the manufacturing of orthopaedic implants? AV&R, an internationally renowned expert in robotic surface finishing and automated visual inspection, has newly designed robotic systems for manufacturers of orthopaedic implants such as knees and hips.

Expertise in robotic surface finishing for 25 years

Since its creation in 1994, AV&R has specialized in robotic surface finishing. With hundreds of robotic systems installed around the world, AV&R has built its reputation in the aerospace and energy industries. The Quebec company has undertaken extending this unique expertise to the orthopaedic industry and has developed robotic systems that now perform various surface finishing processes on implants such as knees and hips. Aiming to meet the needs and expectations of manufacturers of orthopaedic implants, AV&R offers an innovative range of modular robotic systems capable of performing several processes such as polishing or ultra-polishing.

The ultimate performance in automated visual inspection

AV&R robotic systems are also capable of visually inspecting orthopaedic implants. Through years of research and development, AV&R has developed an innovative visual inspection technology that detects 2D defects on the glossy surface of prostheses. By detecting and qualifying surface defects to a level unmatched by the human eye, AV&R's robotic systems provide a guarantee of optimal quality for implant manufacturers.

Unique and innovative software

To optimize their use, AV&R has developed software dedicated to the operation of its systems. Our BrainWave interface specializes in surface finishing and allows you to control the processes performed on complex surfaces. By facilitating the adjustment of system parameters and the development of new process recipes, BrainWave is the link between the robot and the operator. ASIS is the software specialized in visual inspection; thanks to its user-friendly interface, it allows operators to monitor the detection of surface defects. These two interfaces (BrainWave and ASIS) have been designed as easily controllable tools by employees of orthopaedic implants manufacturers and thus contribute to AV&R'S mission of humanizing robotics.

Technologies meeting the requirements of orthopaedic implant manufacturers

Thanks to its long experience in robotics, AV&R has developed products which offer orthopaedic manufacturers the advantages of automation:

- By respecting the principles of ergonomics, these robotic systems reduce the risk of injury to operators and contribute to health and safety objectives.
- With a small footprint, the systems can be easily integrated into manufacturing plants.
- Robotic technology achieves levels of quality, precision, and consistency unmatched by human operators.
- Technological innovations that automate the polishing of hard-to-reach areas such as the knee box or the detection of surface defects not visible to the human eye.
- Optimal control of surface finishing processes to reduce the consumption of the abrasives used and therefore significantly reduce production costs.

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Key Numbers:

- 360 systems in operation worldwide
- Systems in 17 countries
- 26 years as a renowned expert in aerospace

About AV&R

An industrial automation leader for 26 years, AV&R is a Quebec robotic engineering company with more than 70 employees. It offers automation, vision, and robotics solutions worldwide. Its activities are concentrated in the fields of aerospace, energy, and orthopaedics. AV&R designs high-tech robotic systems that perform surface finishing processes (profiling, polishing, deburring, blending) and automated visual inspection for turbine gas and orthopaedic implants manufacturers.

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AV&R's history

