CUSTOMER SPOTLIGHT

Lillbacka | FINN-POWER

POSTPROCESS
Automated. Intelligent. Comprehensive.

ENABLING INDUSTRY 4.0 CONNECTIVITY FOR A TRUSTED BRAND

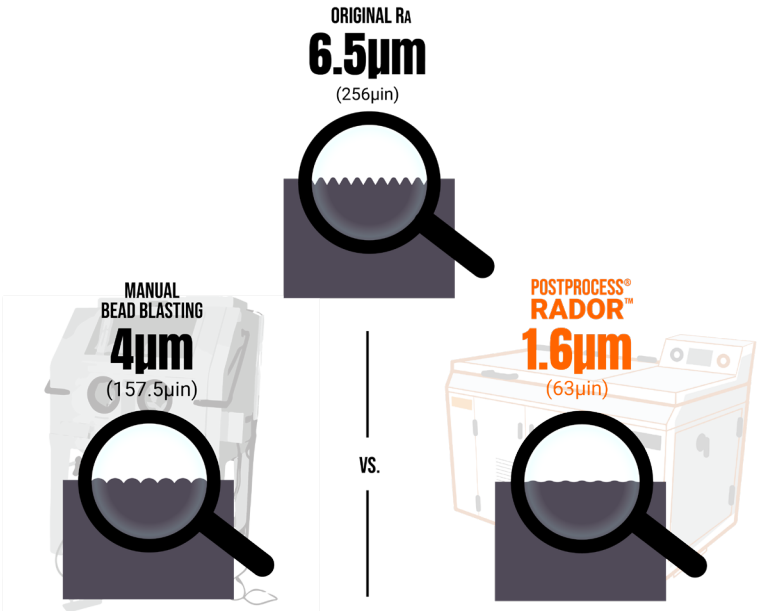
Rooted in Finland and catering to a global customer base for more than 50 years, Lillbacka Powerco Oy is the world's leading manufacturer of crimping machines. With a distribution network covering over 60 countries, their products serve multiple industries and thousands of applications with accuracy and durability. In an effort to modernize their trusted manufacturing methods and keep up with high levels of throughput demand, Lillbacka has implemented Direct Metal Laser Sintering (DMLS) 3D printing with a 3D Systems ProX DMP 300 printer for the rapid production of custom and standard parts.

Lillbacka leverages DMLS to produce the end-use crimping dies that are instrumental to each of their industry-leading crimping machines. While the productivity benefits of DMLS were immediately evident, the post-printing procedures proved to be time-consuming and labor-intensive compared to the rest of the additive process. The highly manual process consisted of multiple steps. Once parts were depowdered, they had to be treated with a manually-operated glass ball bead blaster, then deburred to smooth out roughness. While these processes caused inefficiencies for Lillbacka's workflow, they also raised challenges for the parts themselves related to quality and consistency. Due to manual labor's propensity for quality deviations, Lillbacka struggled with varying surface finishing/roughness results, as well as breakage.

To overcome these challenges and better serve custom tooling requests, Lillbacka implemented the automated surface finishing solution trusted by the global additive industry, the PostProcess® RADOR™. The software intelligent RADOR utilizes a Suspended Rotational Force (SRF) technology to finish Lillbacka's DMLS parts to specifications consistently. Proven to achieve desired Roughness Average (Ra) and dimensional consistency, the RADOR utilizes software-driven agitation settings to suspend parts within an abrasive mix of media and detergent.

EVALUATING THE BEST POST-PRINTING SOLUTION

Prior to deciding to implement the PostProcess RADOR, Lillbacka put their DMLS-printed parts through scrupulous testing. They found that the RADOR was able to predictably and repeatedly achieve final Ra values of 1.6µm (63µin) on a part with an original Ra of 6.5µm (256µin), while manual bead blasting results were highly unpredictable, and only achieved final Ra values between 4-5µm (157.5 - 197µin). Out of five different surface finishing methods that Lillbacka evaluated through a proof of concept, the RADOR was the only solution that was noted as having the ability to highly scale their throughput with impressive surface finishing consistency.



The PostProcess® RADOR™ surface finishes parts to final Ra values at least 60% lower with negligible manual labor and heightened scalability.

While previous manual post-printing processes required about one hour of hands-on technician time, the deburring process was reliant on one resource shared by the entire factory. Depending on the factory's workload on any given day, parts could take an additional 1-4 days to undergo deburring. The RADOR effectively eliminates the need for a deburring step altogether, making time spent post-printing parts manually almost negligible. Thanks to its efficiency and ease of use, the RADOR is Lillbacka's definitive surface finishing solution. This trusted technology is used on virtually every single part they print, including toolsets, crimping dies, in-house tools, and on-demand jobs. The dependability of the RADOR means that Lillbacka no longer has to worry about its growth being inhibited by manual labor.

LOOKING AHEAD TO EMPLOYEE SAFETY, SUSTAINABILITY & EFFICIENCY

Lillbacka, a company focused on sustainable practices and employee wellbeing, has also come to value the safety and environmental friendliness enabled by the RADOR. Thanks to the elimination of deburring, employees are able to limit their exposure to harmful powder particles. Overall, Lillbacka was pleased to have their employees spend more of their time on the clock devoted to higher value-adding tasks and less time risking injury on mindless, repetitive motion-driven tasks.

Commenting on the efficiencies introduced by the RADOR, Masi Tammela, Additive Manufacturing Manager at Lillbacka Powerco Oy, said, "With this solution, we have been able to overcome one of the major challenges of end parts produced with AM - the surface roughness. Today we can consistently and predictably reach and exceed the surface quality requirements we have for the working surfaces of our tooling. We chose this solution because most of the toolings manufactured with additive are customized and often include

complex surfaces, which would have been extremely demanding or impossible to manufacture with traditional methods. For this, we needed a post-processing method that was just as versatile and adaptive as the tool designs. This easy-to-use solution additionally decreases the time wasted on manual post-processing by our highly skilled operators."

Surface Finishing in the PostProcess® RADOR™

About Lillbacka Powerco:
Finn-Power crimping machines are produced by Lillbacka Powerco with 50 years of manufacturing experience of crimping machines. Finn-Power products have been developed to meet the requirements in a variety of different industries. They are used globally in such industries as hydraulic hoses, automotive components, construction equipment, heavy machinery, railroad, marine, electric power transmission, industrial hoses and tube, pipe, wire and cable industry, etc. Generally, wherever metals, plastics, rubber, fiberglass, wood, and ropes are joined or formed Finn-Power products are being used. Learn more at www.finnpower.fi.

About PostProcess Technologies:
PostProcess Technologies is the only provider of automated and intelligent post-printing solutions for 3D printed parts. Founded in 2014 and headquartered in Buffalo, NY, USA, with international operations in Mougins, France, PostProcess removes the bottleneck in the third step of 3D printing – post-printing – through patent-pending software, hardware, and chemistry technologies. The company's solutions automate industrial 3D printing's most common post-printing processes with a software-based approach, including support, resin, and powder removal, as well as surface finishing, resulting in "customer-ready" 3D printed parts. Additionally, as an innovator of software-based 3D post-printing, PostProcess solutions will enable the full digitization of AM through the post-print step for the Industry 4.0 factory floor. The PostProcess portfolio has been proven across all major industrial 3D printing technologies and is in use daily in every imaginable manufacturing sector.

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