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For more information contact:

Amy Ward - Marketing Manager (800) 627-4499 or award@renewaire.com

John Parris Frantz - J.P.F. Communications (773) 871-2600 or john@jpfcomm.com

HVAC MANUFACTURER RENEWAIRE INVESTS MILLIONS TO AUTOMATE SHEET METAL FABRICATION

INVESTMENT FOR AUTOMATED SHEET METAL LASER CUTTING AND BENDING EQUIPMENT SETS A HIGH BAR OF PRECISION, EFFICIENCY AND LEAD TIMES FOR THE ERV AND DOAS INDUSTRIES.

Waunakee, WI – RenewAire LLC, a leading manufacturer of commercial and residential indoor air quality (IAQ) equipment, announced the completion of its eight-month-long, multi-million dollar investment in sheet metal fabrication automation that culminated this month with an added second shift to accommodate rising demand.

The 43-year-old energy recovery ventilator (ERV) and dedicated outdoor air system (DOAS) manufacturer's investment illustrates the HVAC industry's soaring IAQ equipment category growth. The financial commitment is supported by the privately-held RenewAire's 20-straight years of averaging double-digit annual sales increases.

The investment's equipment, which features a Salvagnini SL4 laser-punch, B3 press brake and a P4 panel bender, positions RenewAire for state-of-the-art parts fabrication. The automated equipment reduces manufacturing critical-path time (MCT), saves space and energy, cuts production lead time up to 40-percent depending on the particular part, trims material waste, and increases product precision/quality assurance for RenewAire's consulting engineer, HVAC contractor and building owner customer base. "This ambitious effort of automating our sheet metal fabrication will help us lead the IAQ industry to unprecedented future ERV innovations and product development," said Scott Forest, president, RenewAire.

Previously, lead times on RenewAire's ERV and DOAS sheet metal cabinetry, base infrastructures and component fabrication were prolonged up to two weeks and dependent upon the schedules of a variety of locally contracted vendor outsources.

Now the new vertical integration operated in-house by two trained RenewAire technicians (per shift) offers quicker component fabrication of most sheet metal parts within just hours. While automation is sometimes perceived as a job killer, the investment has expanded RenewAire's workforce exponentially with additional high-skilled assembly jobs to accommodate the increased parts availability.

Besides lead time reduction, automation has improved sheet metal bend precision to a cutting-edge $\pm 1/2$ -degree tolerance versus previously acceptable manual bending tolerances of three degrees.



B3 Press Brake at the RenewAire facility in Waunakee, Wis.



Salvagnini P4 Panel Bender

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A Plan That Was Years in the Making

The investment's planning began prior to the re-design of a 110,000-square-foot building RenewAire moved into and retrofitted as one of the nation's few LEED® Gold-certified industrial facilities in 2017.

Besides a better customer experience, the retrofit also enhances employee workplace health and safety, such as sound dampening, IAQ and light levels:

- ♦ Anti-vibration, dampening floor foundation material for the sheet metal fabrication machinery, and sound-attenuating measures help retain the quiet 55 to 60-dB rating the production area had prior to automation;
- ♦ RenewAire's DN-Series DOAS system introduces five to 10 times more outdoor air than typical industrial spaces. This quickly exhausts laser cutting fumes and other industrial process airborne byproducts and far surpasses the industrial IAQ requirements of ASHRAE Standard 62.1;
- ♦ The building's tunable LED lighting and 12-skylight installation eliminate additional lighting needs near any equipment and reduces employee eye strain.



The Salvagnini towers and fabrication production line.

The new building's doubling of manufacturing space to 70,000-square-feet helped allocate 9,000 square feet for the Salvagnini equipment, especially for two 20-foot-high, 12-shelf towers each which hold three-tons of raw sheet metal. The towers' strategic positioning with the Salvagnini equipment sequential configuration combine for a streamlined, time-saving fabrication production line. The towers' sheet metal inventory is conveyed automatically 120-linear-feet through the pre-programmed laser cutter, conveyance/part manipulation system and panel bending equipment without human handling. Approximately 75-percent of all parts are fabricated without human handling. The remaining 25-percent of parts, those demanding the B3's sophisticated press brake techniques, require partial human handling. However, even that human intervention is lessened with RenewAire's investment into an optional automated tool assistance (ATA) add-on that eliminates labor-intensive, hands-on B3 re-tooling setups.

RenewAire's cross-functional team delivered the area preparation, team hiring and implementation of all the processes required to support the new fabrication department, such as scheduling, material handling, programming and quality assurance. Meanwhile, the equipment installation and technical training for maintenance, programming and operation staff was staged onsite for several months by technical support employees from Salvagnini Italia SpA, Sarego, Italy and Salvagnini America, Hamilton, Ohio.

“The RenewAire team of Manufacturing Engineer and Overall Project Leader, Elena Foti, Fabrication Supervisor, Zeb Pitney, programmers, operators and other RenewAire technical staff couldn’t have realized this project without the consistent commitment and focus on delivering agreed objectives provided by the Salvagnini team,” added Forest.

“It was RenewAire’s vision to produce precise and completely reliable parts that made the unique Salvagnini’s automation a success,” said Giovanni Piccolo, vice president—project management and applications, Salvagnini America. “RenewAire’s defined company mission fostered clear communication between our two teams, which resulted in accomplishing the project’s precise and measurable objectives.”

Producing a majority of sheet metal parts in-house for its one-dozen series of ERV and DOAS products only scratches the surface of the Salvagnini equipment’s capabilities. The automation potential will help facilitate new unprecedented designs and functions for innovative IAQ products RenewAire plans for 2021 and beyond.



Overall Project Leader, Elena Foti (front right) and Fabrication Supervisor, Zeb Pitney (back left).

ABOUT SALVAGNINI

For more than 50 years, Salvagnini has served the global metalworking industry by designing, manufacturing, marketing and servicing flexible sheet metal processing systems, machines, process software and tooling for the lean manufacturing factory. Major product lines include punching and shearing, automatic panel bending and laser cutting systems. And as the originator of automation in the sheet metal fabricating sector, Salvagnini offers complete material handling capabilities, including Automatic Storage and Retrieval Systems, robotic loading/unloading, conveying and parts manipulation. More than 7000 Salvagnini systems are in operation in more than 75 countries around the world. www.salvagnini.com

ABOUT RENEWAIRE

For more than 35 years, RenewAire® has been a pioneer in improving human health, cognitive function, productivity and wellbeing by enhancing indoor air quality (IAQ) via energy recovery ventilation technologies. This is accomplished energy-efficiently, cost-effectively and sustainably with fifth-generation static-plate enthalpy-core Energy Recovery Ventilators (ERVs) and Dedicated Outdoor Air Systems (DOAS). For more information, visit www.renewaire.com, email: ramarketing@renewaire.com or call (800) 627-4499.

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