Salvagnini exploded into EuroBLECH this year with a raft of new sheet metal technology innovations and launches.

**Smart additive solutions**

ISMRSAYS: “Salvagnini outlined its Industry 4.0 philosophy to ISMR, with a strong focus on making machines smarter and more adaptive, able to react intelligently to the data they receive.”

Salvagnini was also given a sneak preview of its IoT (Internet of Things) project, Link5, which is running in partnership with Microsoft. It plans to launch this in 2017.

**Industry 4.0 focus**

“It is good for machines to communicate with each other but, above all, they need to be smart and self-adaptive in every respect, from set-up to real-time running of the actual bending or cutting stages,” Bello told ISMR. “In the age of Industry 4.0, to be effective you need intelligent and adaptive machines that can store and communicate data. The key is to enable them to act on the information they can store and communicate data. The key is to enable them to act on the information they can store and communicate data. The key is to enable them to act on the information they can store and communicate data.”

Bello gave a practical demonstration of concepts linked to Industry 4.0, the Internet of Things and Smart Manufacturing.

“STREAM represents a change of perspective for us,” explained Bello. “It's a practical way to show the new possibilities of using Industry 4.0 technology, which makes programming easy and enhances efficiency, here at EuroBLECH,” he added. The STREAM software suite is integral to the new Digital Factory production model proposed by Salvagnini. Serving as the production operating system, this software is no longer program-centric, instead focusing on the finished product to be produced, its value and the relevant production process. In Hanover, Salvagnini gave a practical demonstration of concepts linked to Industry 4.0, the Internet of Things and Smart Manufacturing.

“STREAM represents a change of perspective for us. We want to move the focus from the program to the final product, its work-stream and the values of that work-stream. The customer can evaluate and choose the best work-stream to make a sheet metal part. It is our own software and will be available in 2017,” explained Bello.

Originally conceived as the range's entry-level model, the space-saving, energy-efficient P1 panel bender, designed for high productivity and repeatability accuracy, was shown at EuroBLECH in an enhanced version, ready for bend on a press brake. So, productivity and flexibility are its key characteristics. P1, like the other panel benders in the Salvagnini range, uses MAC 2.0 adaptive technology, which means that it is not dependent on the quality of the material being processed. The panel bender measures any variations in the material being processed in massed time (thickness and tensile strength) and, if these variations turn out to be outside the acceptable tolerance range, they are compensated for automatically by adjusting blade movements, resulting in consistent bend quality even when dealing with variations in the material within the batch and reducing waste, even when producing batches of limited quantity.

“Just like the other larger models in the range,” explained Bello, “the P1 panel bender now features the ABA automatic blank holder adjustment, to enable it to process different parts in sequence with set-up in masked time, and CLAIR negative auxiliary blades that effectively boost the machine's versatility to enable it to process different parts in sequence with set-up in masked time. It can run parts of up to 1,250mm and has one of the lowest costs per bend in the panel bender market (up to 56 cents of a euro per bend, which is much lower than an equivalent machine based on a press brake). So, productivity and flexibility can be combined, with the option of processing a series of different parts in sequence (making it possible to produce actual kits of parts). The new CUT option to bend different profiles, even on different materials and thickness in sequence up to the maximum bending length, leads to further reduction of incoming scrap.

Additionally, the range of panels that can be produced with this machine has been extended, taking the maximum bending height from 185mm to 235mm and the depth of return bands on the short sides from 30 to 45mm, while also reducing the dimensions of the smallest panel that can be handled. The P4 lean-2500 panel bender in the line has also been enhanced with a series of new options. The versatility of the CLA SIM automatic auxiliary blade setting unit for positive and negative bends, means productivity and flexibility can be combined, with the option of processing a series of different parts in sequence (making it possible to produce actual kits of parts). The new CUT option to bend different profiles, even on different materials and thickness in sequence up to the maximum bending length, leads to further reduction of incoming scrap.

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The Automatic Tool Adjuster feature on the press brake enables users to make parts that are different from each other. This point that the FlexCell starts to optimise because it knows how the parts have been stacked (having received the information from the laser) and automatically decides the work sequence based on machine optimisation or how the parts have been set on the stack.

“...” he added. “The cycle can be optimised based on how parts are stacked upline, or on how machines downline ask for parts required to assemble complex products, or even based on the machines and what sequence is most logical to use them to produce a given part. We are demonstrating this here, interacting in real-time with the choices made by visitors to the stand who want to test its operation, confident in the result. What’s the secret? Having smart machines that talk with each other that are different from each other. We have this ZERO, as FlexCell allows zero set-up time, zero WIP and zero limitations on feasibility of the parts.”

**Laser and press brake innovations**

The L5 system integrated into FlexCell is teamed with an entirely new compact longitudinal automation solution (ADLL) comprising a grip unit and a rake that are an integral part of the structure and enable cutting to take place between the machine’s pallet change unit and the external area. MCL, the integrated cartesian part separation system, was also presented in a new improved version with features like the “blower”, designed to blow off the little bits of scrap that sit on the newly cut sheet. The B3.ATA press brake, now integrated into the FlexCell FMC, has now also been upgraded with numerous automated devices that make it fully self-adaptive and able to offer entirely autonomous operation, in accordance with Salvagnini’s Industry 4.0 concept. The press brake can now handle the production of parts for kits using the ATA (Automatic Tool Adjuster) flexible tool set-up through which it can set itself up and adapt to suit the part to be produced. Re-tooling times have been halved. New dedicated OptiPress software helps the operator to determine which sequence is most appropriate for the production job at hand.

“The Automatic Tool Adjuster feature on the press brake enables users to make parts that are different from each other. We have now made this feature much faster so that press brakes can now be used for smaller batch-work, rather than panel benders,” explained Bello.

High levels of accuracy and repeatability are achieved by equipping the B3 with the MAC2.0 feature. This function on the press brake is enabled by the combination of Angle-Measurement System (AMS) and SCrowning system. The former enables the material to be bent to the correct angle, while the latter keeps this angle consistent along the full length of the bend.

**Focus on the future**

“I am optimistic for further growth next year,” Pierandrea Bello told ISMR. “Our sales in Europe and Asia are good. With our new office in Thailand, in addition to Salvagnini South Asia (based in Malaysia), we can supply growing south-east Asian markets. Markets in the Far East and Middle East are also interesting. Here, at EuroBLECH, we are also seeing a lot of international visitors.

“We run two or three open Techno Forums in different countries every year and are investing more and more into showrooms (we now have showrooms in Austria; Japan; China; South Korea; Italy and the US as well as a new building and showroom in Sweden). Last year, we ran about 20 events. With our ‘smart, adaptive’ approach to Industry 4.0, I believe the future is bright for us.”