

**Solutions,
Technique
and
Innovation:
the power
of SAEL**



SAEL HAS REBUILT THE SHEETER by PIZOLATO AT PAPIERGARDA, TOO.

**THE NEW SUPPLY HAS DRAMATICALLY INCREASED
THE EFFICIENCY, CUTTING QUALITY AND
PRODUCTION.**



by: **Paolo Andrichetti, BU paper**

After the transformation the efficiency has increased by more than 20%, while the entire management has been well optimized allowing new production configuration DENIED BY THE OLD SYSTEM.



SAEL (from Vicenza) made the startup of the PIZZOLATO's Sheeter at Arco TN. Because of the excellent rebuilding made for the JAGEMBERG SINCHRO 350-2150 DD2 Sheeter 4 years ago, PAPIERGARDA assigned to SAEL the electrical revamping of the PIZZOLATO's Sheeter. To replace the obsolete electronic parts no longer available, the revamping was mandatory, as well as a safety upgrade fulfilling the new regulations. The new retrofit, started up in 10 working days only, features powerful diagnostic instruments for the machine operators: through video messages, the software "open source" and all the project documentation are available at any time. The scope of the project was the machine optimization, having an easier and flexible system, with the option of further upgrades. Despite all the material issues related to the COVID, and the UKRAINE WAR as well, Sael started up the machine within the time required by the Paper Mill. (N.d.R. "dr. Collotta—A standing

ovation to the SAEL team for this goal, difficult to be achieved. The chemistry between our teamwork, as much as the availability and competence of SAEL, allowed to overcome all the COVID issues. Moreover, during the start-up and fine-tuning stage, we made all the adjustments and settings for a good stacks paper quality, so far"). The new optimized cutting profile uploaded, combined to the revamped machine, increased by 20% the performances. Before the revamping the machine was getting thermal limits at 80% of the performances; today it works at the maximum speed without issues, having more power available upon demand.

Born in 1982, Papier Garda is a Company focused on paper transformation and finishing. The continuous investments on high performance machines raised up the company to the top of the product offered by quality and customization. Beside the paper packaging at any

size, Papier Garda is specialized on cutting bobbins into sheets, as well as squaring on small sizes, focusing on Paper Mills and Paper Converting customers. Over 9.000 m2 for manufacturing and logistic; 70 people engaged on three shifts are the wide offer to the market. Last, but not least, Papier Garda offers a worldwide service of delivery and pick in place of the goods.

The "TURN-A-KEY" Solution:

- Substitution of the original automation systems and obsolete transducers, by new PLC — HW — Drives and wirings on site:
- PLC S7 1500 FAIL SAFE machine management and sheeter functions integration, formerly driven by a BLACK BOX with microprocessor inside;
- New remote I/O Fail Safe modules implementation (for Safety upgrade);
- Substitution of the entire supervisor system using siemens Touch-Screen Panels, originally installed on a PC.



Papier Garda: PIZZOLATO Sheeter completely revamped. Electrical equipments. Global overview.

-4.0 industry machine integration;
-Supply of the Inverter by SAEL to drive the motors of the new sheet block. The system has been linked to the main Plant system who controls the overall production. The target is a higher efficiency by reducing the downtimes operation and the scraps. The supply involved the replacement of the old Siemens PLC S7 300 by the new PLC S7 1500 FAIL SAFE. The original power section has been maintained; vice versa, all the drives for the pull, blade, longitudinal knives, positioning, belts, and suction AC motors, have been replaced by the new SAEL series with integrated sheet functions.

THE ON SITE JOB

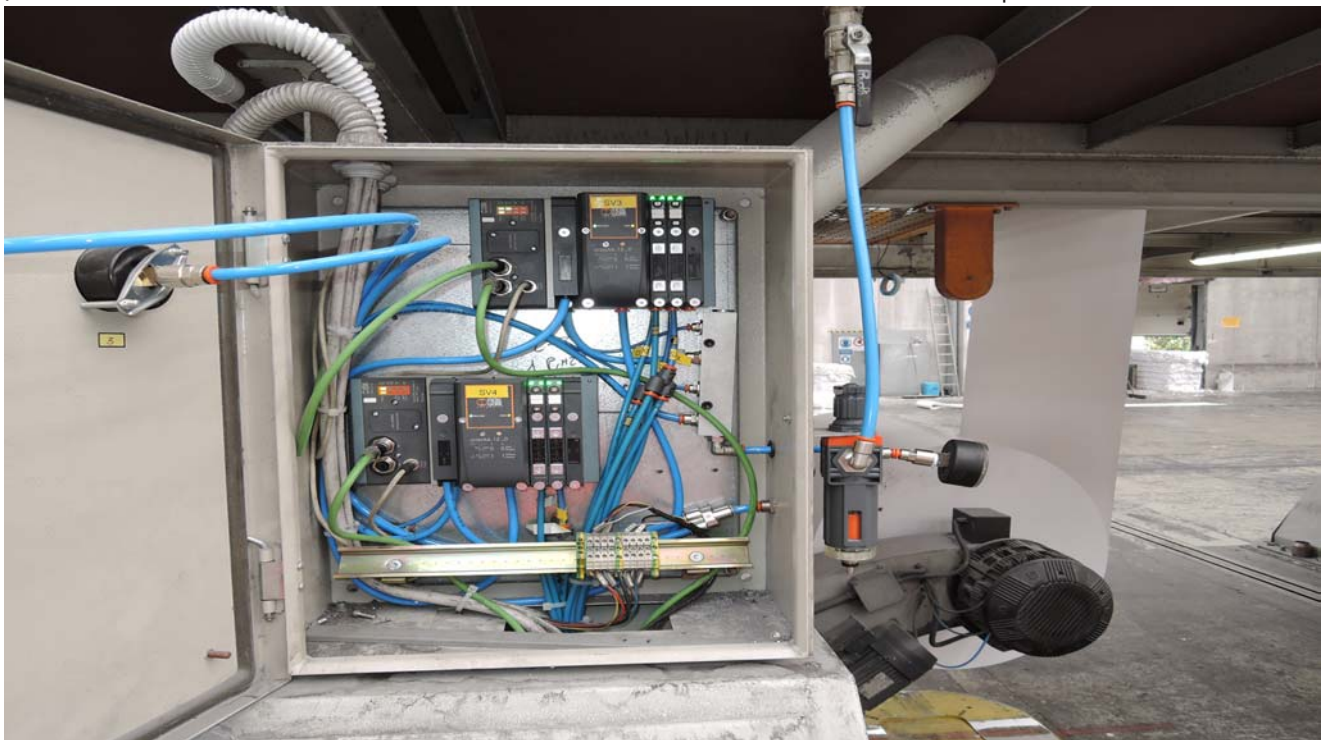
As mentioned above, the supply was a “turn-a-key” solution with all the electrical modifications. Offering the most cost-effective solution to its customers, without quality compromises, SAEL uses the original electrical cabinet parts as much as possible.



The removable memory mounted into every Board, allowing quick replacements, in case of faults, without settings.

Since the first tests made during the start up phase, it was clear the performances increase achievable, and the goodness of the investment who will be paid back in a short time. Working on a revamping, the realization encountered topics to be solved, like the mechanical data unavailability from the original machine manufacturer. During the

technical survey the SAEL team, thanks to its long-time experience, analyzed the original regulation methods by Pizzolato, studying the best ergonomic solution for the machine operator who will drive the system without errors and scraps. All the motor regulations, the algorithms and the machine sequences have been implemented and loaded into



Unwinder boxes – SAEL PLATFORM ONE DRIVE.



Left: The knives automatic positioning has been re-engineered and stored into a working menu.

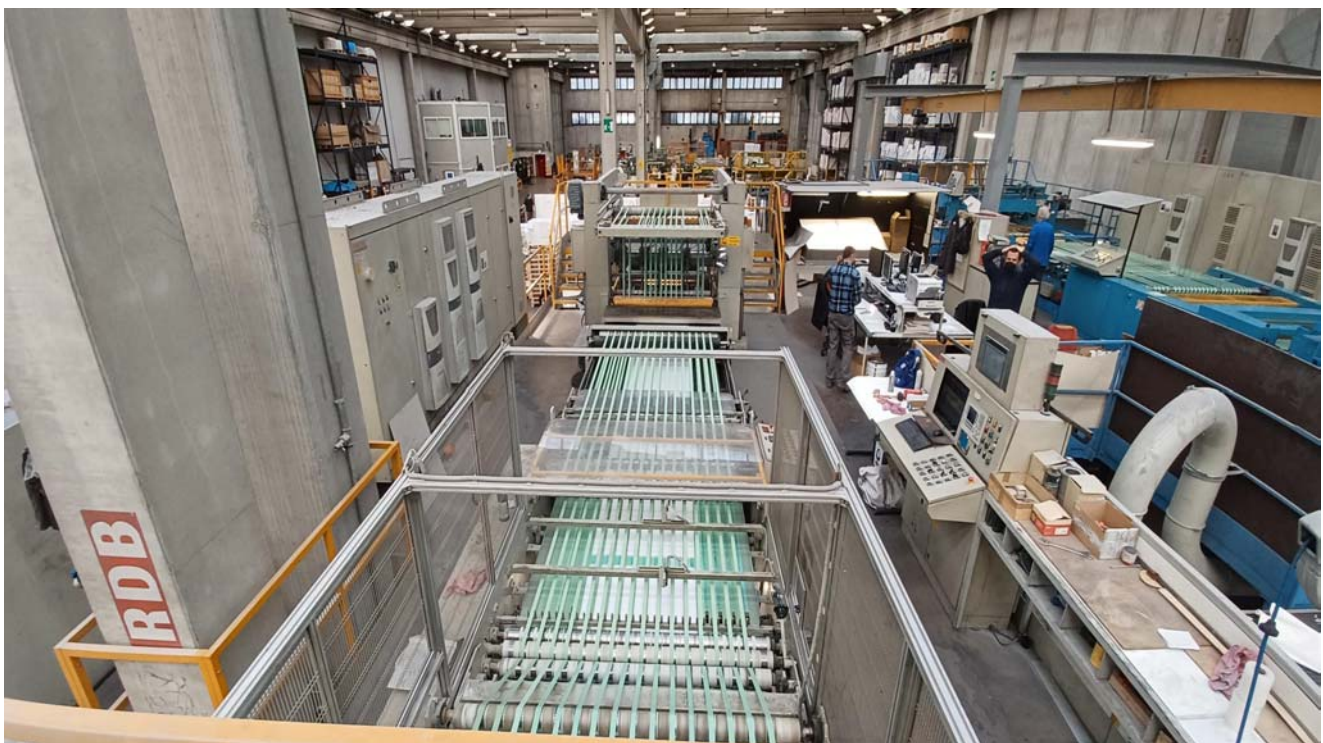
important features of our Drives is the unique, single main board used to drive all the application. Just a single main board, few IGBT or Thyristor for a complete spare part on inventory stock: a huge cost-effective solution.

The Energy Save with Liquid Cooled Inverters

One of the last targets of SAEL was to hit the frontier of the SAVE ENERGY. In the last 4 years SAEL was the sole Company who pushed the Liquid Cooled solution in the Paper Mill application: Inverters Liquid Cooled, inside of electrical cabinets liquid cooled, as well. After the fourth MC application supplied, SAEL is highly satisfied of all the investments made. The results in term of Efficiency and energy savings are

the PLC S7 1500. In combination with the Siemens TP1200 (HMI touch) it provides an excellent operator machine interface. The automation managed by a PLC, is directly linked to the Drives via remote I/O. The inverters – INTELLIGENT DRIVE series – exchange the data via CANBUS from the Pull to the Blade and the Rolls. The Pull and the Blade motors synchronization is managed either by

this network that ensures size accuracy and fast changing. The features of our Drives have been the key to success, ensuring the same quality communication either for AC or DC application. Whenever the inverter is linked to the PLC ProfiNet, exchanges speed and alarms information to the PLC. It expands the PLC I/O working as a remote I/O. One of the most



Existing OEMER AC Motors, driven by our PLATFORM ONE Drives.

VW WATER COOLED SERIES with Safety Torque Off



The “PLATFORM ONE DRIVE WATER COOLED” are equipped with ONE Card (a single main board to control any drive: DC, AC and REEBORN). The Film capacitors ensure long life to the inverter.

above the expectations.

Pushed by SACI-PM3 Paper Mill, that already got a liquid cooled MC machine, SAEL supplied its first Stock Preparation machine using this technology.

SAEL – Technology development for the Customer preservation

The “Intelligent DRIVE” SAEL System, who uses specific inverters for Paper Mill application, allowed quick adaptation of the control system with implementations and modifications for cascade settings, not available before. The warrant offered by SAEL to the market self-explains its operative philosophy. SAEL is the unique company in Europe who offers long life systems, confirming the availability of the spares parts for

ever, no issues of continuous PC, Panels, PLC, Inverters and Boards changings. Another important plus of the SAEL “Intelligent Drive” AC or DC, is the availability of every single component as a spare part, saving a lot of money to the customers: in countertendency to the competitors, who continuously plays with the “phase out” product policy.

In the end, there is the IWSA – Internet World Sael Assistance – included for any application: this tool allows the technicians to remotely support the application and any issue, eventually. It means that for each station equipped by a supervisor, it is possible to work on BIOS, digital boards, Software and Plc modification, and so on ... all in remote mode.



always with you

