



## REBORN, WHEN THE FACT SPEAKS BY IT SELF... A BELOIT REWINDER REVAMPED IN 24 HOURS

THANKS TO THE SAEL "REBORN" - WHO USES THE EXISTING DRIVES IN THE CABINET - THE BELOIT REWINDER DRIVE RESTARTED WITHIN 24 HOURS OF TESTS. TO COUNTERMEASURE THE LOW FLEXIBILITY OF THE EXISTING DRIVE, A MODERNIZATION WAS A MUST. WITHOUT MECHANICAL MODIFICATION AND POWER INCREASE, +43% OF PRODUCTION HAS BEEN ACHIEVED.

# SAEL... Winder Beloit Burgo

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**The** best Team game between Villorba Paper Mill electrical people and SAEL. Over 10 years of experience with the REBORN system on Paper industry and many applications, made possible to achieve this incredible result: the BELOIT Rewinder revamping with the SAEL Supervision system.

The focus of the job was the machine renewing as much as the speed production increase from 1600 Mt up to the limit without any DC motor replacement.

Thanks to the SAEL sophisticated own algorithm who crosses the mechanic and the "on torque" motor regulation it was possible to reach 2300 Mt/min

without electrical modifications - -/+3% without load cell, is warranted -.

At the beginning the REBORN system renewed the existing drives using few components available. Later on the Paper Mill management did push for the entire old electro mechanic dismantling in front of an updated machine adding I/O to the Pulper Drive.

The main Drive, the driving boxes and the field sensors, were re-wired and integrated into the PLC as much as the machine Supervisor. The good knowledge of the Drive and the executive SAEL system - already known by the Villorba Team since a while - built a chemistry of people between the two Companies.

Actually the mission of this Team was to re-start the Beloit Rewinder in a short time ever. Normally, and having skilled people, those jobs are made in one week. But this was not a given at this time. The free slot available, and already scheduled months ago was: 26-Dec for the electrical tests; 27-Dec production over the 3 shifts. Due that a micro-time management scheduling was required.



**Paper Mil Burgo Villorba, Beloit Rewinder, SAEL Intelligent Drive**

The outcome of this accurate management, and the pre-works preparation, was to get the job done within 24 hours only!

This was the expectation having a skilled teamwork in combination with the SAEL service points SIMI and P.KEY - used for the electrical wiring.

The jobs involved were the renewing of 4 existing DC drives by the SAEL REBORN and the building of a new electro mechanic section within the cabinet for the machine aux management - directly made by the Villorba Team under the SAEL coordination -.

The device had to be integrated with a bunch of existing systems who required an accurate study as much as detection, later on managed by I/O remote isles of a S7 PLC , - just known as the controller of our application -.

The 24th of Dec brake planned the Relè and the inside cabinet electro mechanic dismantling operations leaving the diode bridge of the existing drives.

Once again the SAEL REBORN showed its full efficiency, flexibility and best solution for those kind of revamps.

Within the full reliability of the old DC Drive revamping, the REBORN regulation rack replaces any standard drive. The old regulation board is

replaced by the SAEL "Intelligent Drive" allowing the use of the existing power section - SCR bridge, contactor, fuses - The assumption that REBORN is a well known system within BURGO Group as much as its inside teams, did support the entire old electro mechanic replacement within the timing agreed.

The continuous involvement of the Burgo team on trainings and software tools allowed did born and raise a committed team over the years. The architecture used is the mature "Sectional Drive" by a classical S7 PLC in combination to an I.W.S.A. - Internet World Sael Assistance - machine supervisor. This ensure a direct management to the machine workers. The monitor, keyboard and mouse have been placed into the Driving Pulper; and this got a bunch of changings over the time integrating functions within the monitor who took away some keys in the panel.

The video control system gives the process visual management, the trends, and allows to set all the variables supported by rich synoptic easy to drive.

To get this strong interaction between the PLC and the Supervisor many utilities have been created, quickly available by simple masks for analogical input settings and furthermore.

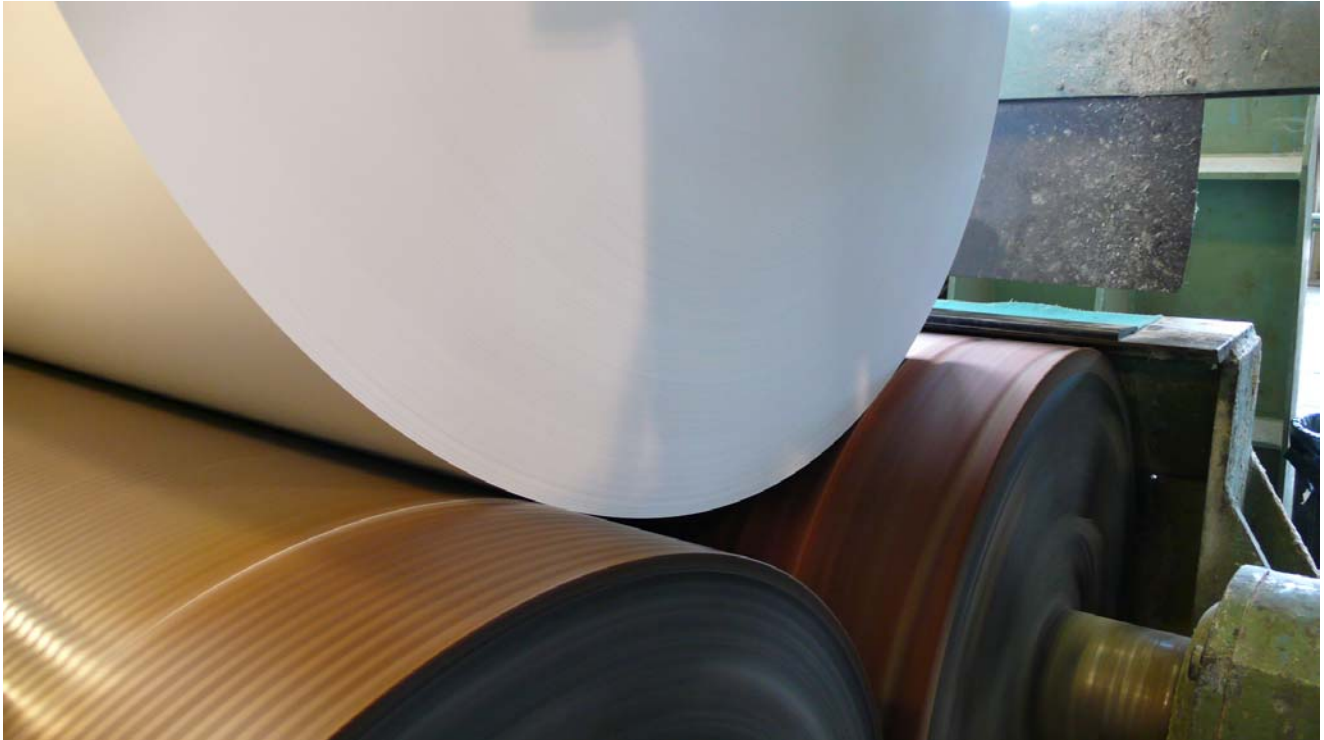
All the PLC parameters are stored and managed as config files into the machine supervisor. In case of failure this ensures a quick re-start by having the root cause displayed.

The IWSA - implemented since Jan-2005 - also shoots to the waste of time in case of fault. Actually this keeps under control the system directly from the SAEL site: Supervisory PC; PLC; DC Drives.

The "WINDER-SAEL" engineering station is the JAGAMATIK system: a tool who supports and manages all the drives owned by Jagemberg. By having the WINDER-SAEL you get other



**Drive Control Desk before and after the electrical modificaiton**



**First coil got by curves from the former stop, Villorba Paper Mill.**

interesting features described along the chapter.

The product was made by a simple graphic navigation interface that encloses many images and tabs. This allows not skilled people any kind of management. Beside the machine management the system allows to set and program all the Drive as much

as the PLC within the Drive.

IWSA completes the offer by supporting in remote any kind of need - Some time also the Drive testing can be done remotely -

As a point of difference to the JAGAMATIK system, SAEL implemented the TREND function into the WINDER-SAEL.

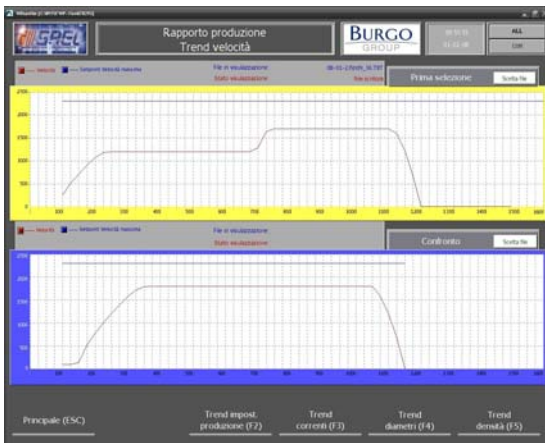
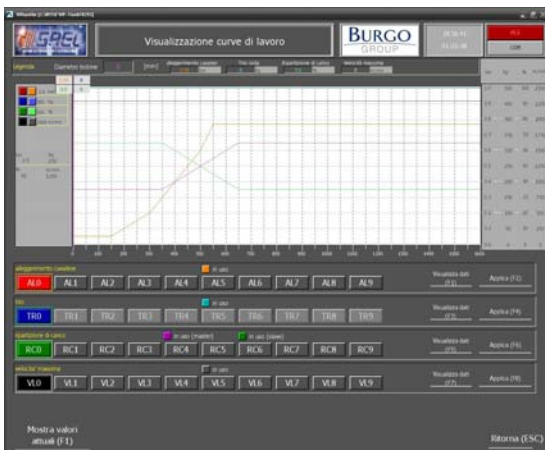
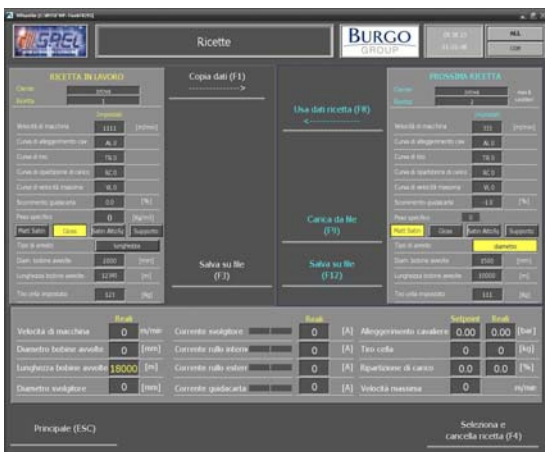
The historical trends of each coil produced - This was a "dreamy feature" of the customers -.

This keeps track any production at any time showing troubles occurred eventually. This is a super valuable help to certify the quality.

Another important key feature as the Real Time Trend who keeps stored the



**Beloit Rewinder Reel-Unwinder, Villorba Paper Mill.**



machine trend within a circular buffer to be settled in a range between 7 to 30 days - further more upon demand -.

Incredible and best flexible intuitive logical are the production menu who allows the workers to recall any single job done over the years, and transferring to the machine all the parameters for the original conditions.

By a "Click" it is possible to recall a complex menu built time ago and send it to the machine quickly and safety.

The alarms are the most interesting offer. Each of them is stored into the Hard Disk and it is possible to get any kind of information related to the fault. This is the best guidance to the problem solving activity.

The architecture is Windows XP based using a simple Scada. This gets the system fully compatible and open. the main supervisor functions are:

- Synoptic plant with all the motors visualization split by zone;
- Visualization of all the electrical data over the bar graph and numerical as well;
- Continuous Alarm diagnostic and storage into Hard Disk;
- Machine Set point visualization and content modifications;
- Real time and Historical Trends stored into files - for each single coil -;
- 4 weeks main data Trend storage;
- Counter-points, Rider, Speed, Pull and Main Rolls load lightening Curves generation
- Menu with stored set points, selected curves, production data and fast data transferring by one "transfer fnc botton" for not advanced people.

**Some video pages of the VARDUR Rewinder management, our "WINDER-SAEI", the antagonist of Jagmatik System**

