



DURING THE AUGUST STOP, THE TWO KLEINWEFERS AND BRUDERHAUS SUPERCALANDERS MAIN DRIVES HAVE BEEN REFURBISHED AT BURGO-SAREGO: ELECTRICAL EQUIPMENT, SYSTEM, DRIVES, WIRINGS AND TESTS, IN FIFTEEN WORKING DAYS ONLY. AFTER THIS COMPLETE, AND DEEP ELECTRICAL MODIFICATION, THE TWO SUPERCALANDERS WENT INTO THE THREE SHIFTS DUTY CYCLES, BY 30% OF SPEED PRODUCTION INCREASED; MAINTAINING THE EXISTING MOTORS.

SAELsrl.

BURGO-Sarego

by: **Paolo Andrighetti, BU paper, SAEL**

The last August, two different refurbishing were applied to the two supercalanders main drive. Beside the machine book and all the safety updates – according to the regulations in force – we revamped the pulpers, Drives as well as the machine automation Plc. The two DCS supervisor, that manage the systems, provide all the information to a more comfortable machine drive by the operators. Recipes, synoptics, thermoregulation, kuster and Sensomat hardness curves, single bobbin trends and all the other variables trend have were integrated in the Scalink Platform who controls the Main Drive Machine, the Calanders, Stock

Preparation, Stock Recipes, Steam, Refining, Paper Preparation, Gas Turbine, Steam Turbine, Gas Motor, Electrical Distribution, and so on...

KLEINWEFERS CALANDER

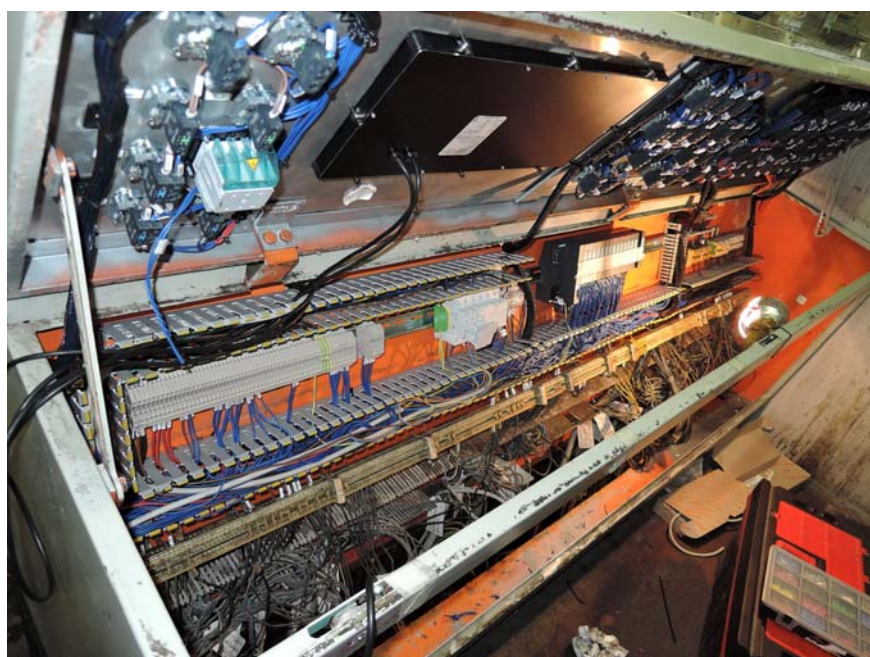
In this machine we renewed the existing, old, electrical cabinets by our REEBORN ONE



Cabinet re-use with wiring operations and REEBORN ONE

system. A new regulation hart was installed in each power section drive, saving the original cabinet parts. Beside the machine refurbishing, the scope of the supply was to increase the machine speed from 900 meters up to the maximum possible by having the existing DC motors. Thanks to the Reeborn inside algorithm model, who works on the mechanic of a motor settled (+/- 3% of accuracy ensured, without load cell regulation, too) we achieved **1.100 meters per minute** without any electrical modification.

The quick and cost-effective substitution had by the flexible REEBORN, pushed the paper mill team to move forward and changing the obsolete electro-mechanic maintained at the beginning of this job. So far, we made a new machine architecture adding



Calander Pulpit reconstruction – operations made on site. Same for the electrical cabinet.

remote I/O to the pulper as well as to other points. That's why the calander thermoregulation is now managed by our system. To respect the delivery date commitment, the job involved a teamwork of our technicians, **SIMI&C** (SAELs Service Point in Lucca) focused on cabinets and machine rewiring, and the Paper Mill operators. The whole refurbishing consisted of relays changings, electro-mechanic and old parts changing to the cabinet, leaving the original diods



KLEINEFEGERS SUPERCALANDER reconstruction together with the BRUDERHAUS Drive made on site.

power sections of the existing drives renewed by our REEBORN. Another won of SAELs REEBORN: The Flexible and easy to install tool for Paper Mill revamping applications.

To ensure the maximum reliability of the existing DC Drives, the REEBORN Unit Rack replaces the original regulation board with our “ONE Intelliflex Drive”,

maintaining the power section (SCR bridge, Contactors, Reactance and Fuses): more than 2600 units sold to update any d.c. drive brand in the market. Today, REEBORN is a consolidated upgrading tool adopted by all the CATIERE BURGO plants. This assumption was the main driver for a complete change of the obsolete electro-mechanical parts respecting

the stick delivery dates got by the Management. The paper mill operators involvement, as well as the training rolling process, creates a synergic environment with a win-win snow ball effect.

BRUDERHAUS CALANDER

In this machine we supplied the entire electrical cabinets with new drives. Originally the equipment was made by Siemens drives and electro-mechanic, today obsolete. This was a big concern for the Paper Mill Management. In this machine we rebuild the cylinders thermoregulation and the Sensomat system – formerly separate parts of a non-linked machine system - . Due to the many signal cables, as well as safeties to be refurbished, it was a huge effort. However, we met the customer expectations increasing the Calander performances achieving, last



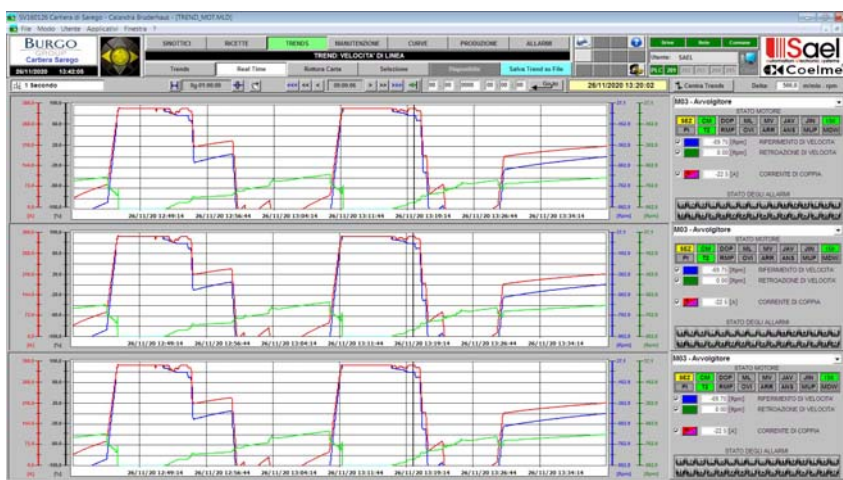
One board fits all our Drives, DC-AC-BRUSHLESS-CHOPPER and REEBORN (the system who saves the original Drives, all brands included) of the “INTELLIFLEX PLATROFM ONE DRIVES”



Picture of the new electrical equipment with SAEL ONE DC Drives



Screenshot of the Supercalanders supervisor “DCS IN DRIVE SAEL”



The trends memorize all the system variables – one time per second – allowing the operators to space between many parameters like temperatures, currents, commands, safety, etc., back over the years ... “DCS IN DRIVE SAEL”

but not least, a secondary target of the Management.

The architecture used on both the machines is the typical SAEL “Platform ONE Drive” that combines our ONE boards with a traditional S7 Siemens PLC and a machine Supervisor with I.W.S.A. (Internet World Sael Assistance). It allows an easy and direct machine control by the operators. The control pulpit units were transformed and updated with many functions at the monitor as well as eliminating some buttons previously used. The video control system shows the processes, variable trends and job settings supported by very easy synoptics for an efficient Calander management. To make this happen, the interaction between the DRIVE, PLC and SUPERVISOR is today managed by several utilities like PID regulators, or analogical input setting masks, and so on. Actually, for a quick machine restart in case of fault, all the PLC parameters are stored and managed by configuration files of the supervisor. Another useful tool for a quick machine restart is the remote control IWSA (standardized since January 2005 and available on all the machines revamped). As it itself explains, this application permits to support the customer at any time wherever our technicians are. Over the years we supported this important aspect increasing the number



Beside: SENSOMAT – KUSTER cabinet system saved, modified and integrated in the calander: Control and regulations are now made by the DCS Scalink and Siemens PLC S7 1500 profisafe.

of technicians involved, offering to our customers a constant support. In the respect of everyone – using more and more standard PLC in combination with our “Intelliflex Drives”, today we believe that SAEL is the best choice vs. the most common and known European automation manufacturers.



ABOVE:
The **BRODERHAUS** Electrical Cabinet during the testing phases, and located where the old Siemens equipment was.

BESIDE:
Picture of the Desk totally rebuilt after the start up – **SAEL REEBORN ONE**

SAEL BOX:

Paper Mill specializations:

Born in 1987, Sael offers Integrated Systems and Process Controls for Industrial Automation. Within our mission, Customers First. SAEL was awarded the title of tailor maker for any automation system. SAEL is now a leader in the Paper Industry. The big technical imprinting allows us to offer custom solutions: from Heavy Duty up to the General Purpose. For the Paper Mill Industry, especially, SAEL offers highly sophisticated and innovative technical solutions. Hardware and Software custom solutions for any customer needs. Beside the complete new equipment production, there is a focused Team who works on re-engineering – most of the time saving a lot of existing components like the original power section or electro mechanic parts and so on. The main application they are working on are:



Sectional Drives with DC, AC and Mixed Technology; Motors implementations; In-line / Off-line Coating machines; Analogical to Digital cascades conversion; Stock preparation by PLC

or SAEL technologies; Rewinders and Slitters with cutting units and frame position; Winders and Unwinders; DCS and QCS controls close our experience in paper Industry



The “PLATFORM ONE DRIVE” Inverter is made for Paper Mill Industry. They are the most innovative solution in the market. Their mission is the long life, and easy to be repaired; flexible and easy to drive. All our drives are equipped by the ONE Card – A Single board fits all the drives: DC, AC, Brushless and Reborn -, Film capacitors for a long life inverter.

