



## REBUILDING OF THE MACHINE ONE DRIVE AT BURGO AVEZZANO

DUE TO TECHNICAL ISSUES OCCURRED TO THE OLD CONVERTERS, THE EXISTING MACHINE DRIVE WAS RENEWED BY OUR REBORN SYSTEM. STARTING AT THE BEGINNING OF AUGUST AND ACCORDING TO THE SCHEDULING FIXED BY THE MANAGEMENT THE ENTIRE JOB WAS DONE WITHIN TWO WEEKS

# SAEL s.r.l. BURGO Avezzano

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**W**ithin fifteen days the entire machine drive at Burgo Avezzano was done.

Actually the 44 dc Drives were rebuilt by our REBORN system, adding a new dc Drive for the lower king roll drive. The job involved the whole Machine Drive - modifying the cascade refs - was coordinated by Burgo Technology & Investment Management with the Paper Mill managers Eng. Rossi, Chinappi and Bellucci.

Our newest and high performing "DCS on Drive" machine allowed a quick check of each section of the Machine Drive. After a bunch of adjustments the machine reached the top performances in few days. The technical team got answered on may open topics uncovered by the old system.

On Christmas 2010 stop - the sole maintenance slot available - further software adjustments were done,

adding some controls and regulations as well.

The Machine Drive is more friendly user and intuitive now.

Some numbers: 6 Mw Installed power for the motors Drive; 320 Tons paper production per day; 3,8 mt 1.100 mt/min Maximum speed. Along these two intense weeks over 40 people per day were present in the workshop. The production achievement of 900 mt/min immediately paid off the investment



**AVEZZANO PAPER MILL, CONTINUOUS MACHINE HEAD, SAEL Intelligent Drive**

itself.

Back to the subject, the most impactful job is the REBORN Kit installation. All the old Ansaldo drives - on different type within the same brand - have been renewed by the REBORN system.

Once again SAELs REBORN Kit is awarded as the most versatile, flexible and cost effective device for Paper Mill installations.

REBORN is a standard device within the Burgo Group. Due that it was easier to promote the cascade refs with "SECTIONAL CONTROL" system.

This is the sole system based on the SAEL Intelligent Drive who allows to not use a cascade refs management.

A direct CAN-BUS communication where each Drive is linked to the others.

Actually the CAN-BUS is a **Multi-master** system vs. a traditional Master-Slave field bus system used by our competitors. This allows a full control of any single communication.

With our programming and DCS tools we can control how many packs we want to as much as every single Trend up to 45 days on.

Any problem or fault communicated is captured and stored. due that, in case of a Drive fault, all the



**Electrical wirings made on site by SAEL**

countermeasures can be applied along the way.

As already happened in the past, for this particular job, our Sael point - SIMI from Lucca - mounted the REBORN system directly on the existing old drives, power switches, transforms and other parts eventually recyclable.

A Team has made all the modifications applying the REBORN KIT and all the CAN-BUS communication net.

The actions according to the Safety compliant rules were done as well.

In replacement of the old S5 PLC, a S7 PLC manages every sequence from today on. The old microprocessor boards used to control the machine speed and the RS 422 cascade refs have been replaced by our SAEL Intelligent Drive unique system - who does not use a cascade refs process -. The structure based on CAN-BUS, SAEL Intelligent Drive, PLC with VIPA CUP inside, and the Profibus Master-Can to the PLC communication, allowed us to work on Ethernet platform speeding up any single communication.

Through this platform as much as the addition of the Scalink - who manages all the control and supervising functions plus the Drives communications to all the Hardware - we achieved the maximum system integration. Within the new HW platform and integrated SF, we thought "**beyond**" adding many features to the existing operations.

The DCS opening to Windows and to any HW existing device, will allow all the integrations possible. No barriers at all. The OPC server and DDE Scalink standard function allow the data exchanging to the existing DCS getting a full integration to our applications.

After may years of improvements this system encloses the Engineering



**Existing DC Drive after REBORN renewing**





**SIZE machine 1 section view - Avezzano**

Station functions getting the PLC and the Drive programming itself. Moreover our IWSA - Internet World Sael Assistance allows the remote as much as real time machine management, including any kind of fur their modification or programming or whatever else.

To get the system open, the structure is based on Windows using a standard Scada-DCS in drive SAEL. From today on the functions available are:

- PLC and Drives programming via the machine DCS.

- Historical Trends up to 45 days - and over, upon demand - for all the motor variables subdivided on three main sampling timing: 1 - 5 - 15 sec) -. Within the motor trend were applied other variables as Drive unlock; Alarm State - available on real time during the historical trend read out -. The motor trend displays all the motor variables - no track research is required - with the option of three motors in a time displayed - The selection can de done via a menu catalogue -.

- Paper breaking via Photo-Cell: Motors variables automatic storage 3 minutes before and after the paper breaking detection. The data is available on a file with the photo-cell name, data, time of the fault.

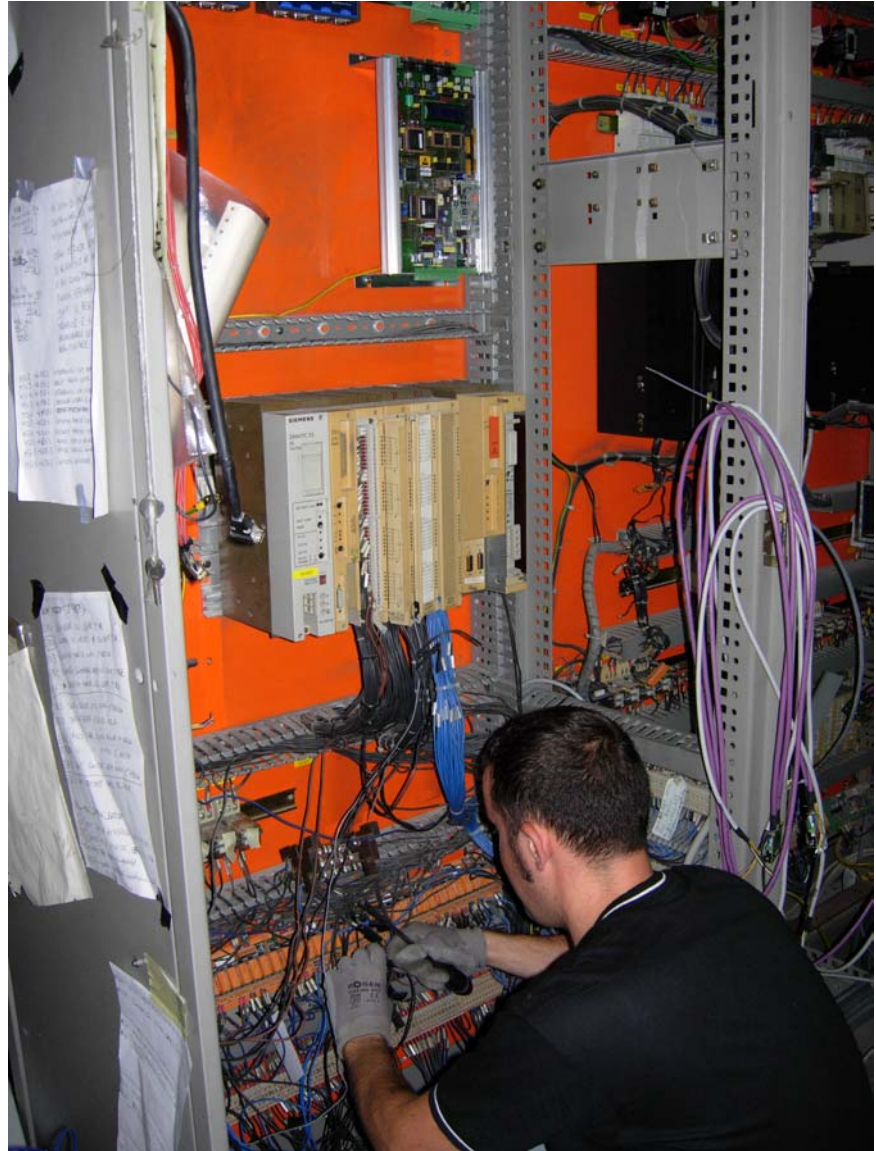
- Paper breaking via Drive: Motors variables automatic storage 3 minutes before and after the paper breaking detection. The data is



**Dryer section machine 1 view - Avezzano**



- available on a file with the photo-cell name, data, time of the fault.
- Motor management POPUP with all the set points and the selected motor variables programmed - diameter; reduction ratio; cell setting; load; etc. -.
- Motor alignment POPUP to an accurate and quick start up Drive activity.
- Motor maintenance POPUP with variables setting display and drive.
- Advanced diagnostic with Help for each alarm. Direct editing by the personnel for electrical maintenance easy report - for each alarm and action done -. This allows the most complete reporting.
- Electrical diagrams automatic opening by a simple click on the alarm displayed. This action allows a direct and easy management of the fault because everything is on screen.



**S5 PLC replacement with a new S7 model**



**AVEZZANO PAPER MILL, FINAL SECTION CONTINUOUS MACHINE, SAEL Intelligent Drive**