



IMPROVEMENTS

LATEST NEWS ON COLINES® TECHNOLOGICAL DEVELOPMENTS



ISSUE NO. 8, OCTOBER 2016



COLINES®



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EDITORIAL

K 2016

SPECIAL EDITION

DEAR CUSTOMERS,

in my latest press release some months ago I expressed a cautious optimism on the recovery of our market, having noticed an intensification of commercial negotiations and contracts. This was mainly referred to USA market and, even though as a “leopard-spot”, to Central and South America but also to Asia and in this area especially to India.

The Middle East, with the exception of the lively Turkey, was not particularly responsive. Europe and Russia still had difficulties in recovering, whereas some countries of the former Eastern block, already part of the EU, were still moderately investing, as they could count on financial aids from EU itself. The present situation has significantly improved in general, also in Europe and in the former Eastern block countries, that nowadays can still count on EU incentives. Actually, however, the driving force for recovery, more or less evident according to the different geographic areas, nowadays is based upon the new market requirements and expectations. In fact, the former aspects on which the choice of the machine supplier was focused, i.e. price, delivery and payment conditions, are no longer the sole references. Today these factors came overwhelmingly into play: specific energy consumptions, performances and quality without compromise, innovation, reliability, after-sales service, the transfer to customer of technology and experiences on raw materials and products with the related applications. This does not mean that in the past the above elements were ignored, but simply that the ROI is analysed on the basis of a more careful economical verification on the overall impact of the above variables in the scheduled investment. It follows that, for example, it is not obvious that the lowest price corresponds to the best option.

Today the market recovery definitely rewards those companies that made efforts to innovate and thus have an extensive solid, updated and undisputable know-how, that are better structured, have a confirmed capital strength and quickly respond to market demands to the greatest possible extent. The companies belonging to **GRUPPO COLINES® HOLDING** have understood this change in due time, taking all necessary steps to improve their market position worldwide, obtaining the highest consideration from the market itself, being rewarded with a considerable growth in the turnover. From K 2013 to K 2016 the total sales volume of the companies belonging to **GRUPPO COLINES® HOLDING** have increased by more than 40%, but of nearly 70% if compared instead to K 2010, for which we are obviously extremely grateful to our customers. Amongst the latest news of our group, we would like to emphasise the establishment of **COLINES® USA Corp.** in Hauppauge (New York State), dedicated to technical service for our numerous customers in the area, and of **COLINES® Air Bubble**, based in Bastia Umbra (Italy), with the aim of even more increasing the technological level of the air bubble film lines, where **COLINES® SpA** is leader since the 60s.

In this magazine we are presenting our latest innovations, amongst which worth mentioning the **PRErollEX®** line (in operation during the show next to **ALLrollEX®** 2000 line) and especially the wrapping machine **ALLWRAPPER®** AUTO and **ALLWRAPPER®** BASIC (in operation during the show) which represent an essential novelty in the production and use of stretch film.

...there are, of course, many other things to tell you, so we will be glad to welcome you at our booth A39, Hall 16 during the K 2016 exhibition in Düsseldorf.

Eraldo Peccetti
CEO & PARTNER



THE EVOLUTION GOES ON...

ALLrollEX®

Since the launch of the first line at the last K2013, **ALLrollEX®** series has been representing the best-seller for **COLINES®** in all widths, from 1000 up to 4000 mm. Thanks to effective energy saving, flawless winding quality and layout flexibility, **ALLrollEX®** represents the benchmark in cast stretch film technology. The great number of lines sold worldwide witnesses the huge success and the confidence of our customers in the **COLINES®** technology.

BUT WE ARE NEVER SATISFIED AND THE EVOLUTION STILL GOES ON!

At the K2016 COLINES® will present the latest 7-layer ALLrollEX® 2000 line equipped with 5 extruders with noteworthy innovations and technical solutions aimed at further improving different aspects and performance:

- 1 The new series of **PERFORM-EX®** extruders improved with new-design extrusion screws especially designed to reach outstanding **production efficiency and better mixing capacity** of the materials, with particular consideration to metallocenes/elastomers/PP, mainly used for the production of technical films.
- 2 The **PERFORM-EX®** extruders are equipped with IR heaters for low energy consumption (effective **energy saving up to 22%** versus conventional ceramic heaters) and insulating mattresses (**up to 35% energy saving** thanks to the reduced heat dissipation in air). These solutions permit to drastically reduce the energy consumption.
- 3 The **new line layout**, characterized by a new supporting framework with opposed extruders, thus permitting a **better exploitation of space**, facilitation of ordinary and extraordinary maintenance operations, which can be proposed either in "in-line" or "angled" configuration.
- 4 The chill roll unit is equipped with no. 2 cooling cylinders with diam. 1400 mm + 300 mm; the second cooling roll is positioned in such a way as to maximize the contact length of the film on the chill roll (up to 309°!), so the frost line can go down to 7 ÷ 8 o'clock, which is **the key factor** for the production of film with high elongation.
- 5 The chill roll unit is equipped with an edge pinning unit with micrometric and graduated positioning, featuring the maximum simplicity and particularly repeatability for the operator. In addition, the line is fitted with a temperature sensor on the film to monitor **the position of the frost line**, which is very useful to obtain uniformity and repeatability of the mechanical characteristics of the finished film.

COLINES® lines are evidently equipped with **the well-known BigMouth®** recycling system (total consumed power 4 kW), allowing to:

- Recycle an amount of fluff material **up to 50%** of the instantaneous capacity of the extruder, as it is capable of compressing the fluff up to a density very close to the virgin pellet.
- Recycle edge trims in line when running thin films composed of “technical” raw materials like metallocene, elastomer and so on, **without compromising the film quality** from the point of view of the gels.
- Produce/run 450 mm wide reels with wider trims without deckling the die (impossible operation with a standard size scraptruder or a side extruder).



The new AllSpeedy® winder single frame, 2000 mm wide, with 5 patents, for 3” cores, permits to:

- Produce rolls up to 408 mm diameter, with no tail thanks to our patented system.
- Minimize the air entrapment with high speeds and low thicknesses, thus obtaining a perfect reel geometry, thanks to the special surface finishing of the rollers.
- Run several formats: 250 mm, 300 mm, 450 mm, 500 mm and 750 mm; further formats are even available.
- Combine and run different formats at the same time like, for example, 1x500 + 5x300 mm or 2x750 mm + 2x250 mm etc., a unique feature in the world.



ALLrollLEX® 2000 line with its **Allspeedy®** winder are engineered to reach extremely high mechanical speeds (1000 m/min) with a vibration level close to zero, thanks to the deep analysis of the critical resonance speed of all rollers and shafts.

During the exhibition, the **ALLrollLEX®** 2000 line will run a film formulation developed in collaboration with ExxonMobil. This formulation provides an excellent processability at high line speed and film performance.

KEY FEATURES

Outstanding stretchability and holding force

Excellent puncture and tear propagation resistance at high stretch ratio

Reliable high speed wrapping performance

All these features have been achieved thanks to the special mix of different raw materials, all of them coming from ExxonMobil portfolio, and also, of course, thanks to the superior characteristics of **COLINES®** line, that permits to empathize the raw materials' properties due to the high-sophisticated cooling and tension control.

The said film can be produced in a wide range of thicknesses, typically from 12 micron up to 21 micron, in order to cover thousands of different applications, being ideal to very different uses thanks to its innovative and excellent characteristics.

The Allspeedy® winder provides for the well-known version which allows the winding of films with a thickness even lower than 12 my on 2” and 3” cores.



PRErollEX®

CONCEPT

Pre-stretched film is a stretch film which is stretched close to its ultimate break point during the film winding prior to contact with carton core on the winder; it doesn't require as much stretching energy as a standard stretch film to achieve the same wrapping force around the goods to be wrapped.

Pre-stretched film is a stretch film which is stretched close to its ultimate break point during the film winding prior to contact with carton core on the winder; it doesn't require as much stretching energy as a standard stretch film to achieve the same wrapping force around the goods to be wrapped.

For this reason pre-stretched films are becoming more and more popular for hand roll use, being the finished rolls usually much lighter than stretch hand rolls and easy to handle, reducing operator fatigue.

With this product users are obtaining the same load stability as machine application, with less quantity of the film and for application of pre stretched film less physical energy is needed.

The film is wrapped on the goods with much less force than standard stretch film because no additional stretching is required and has the tendency to tight naturally after the application.

The residual elastic memory is one of the main reason for pre stretched film production.

Pre-stretched films are much thinner than standard stretch film so this produces less environmental waste since the operator uses less material during application, down to 70 % less.

Since 2010 pre-stretched film demand increased from less than 70,000 tons/years to over 100,000 tons/years and in the next 5 years period an additional average increase of 5,5% per year is expected (source: AMI Consulting, Stretch and Shrink Film 2016).

In the past there were some attempts to produce pre-stretched film in line on cast film lines but the same solutions of in line production of pre stretched film didn't have big success.

PRErollEX® 1.000 is the first successful solution for the production of pre-stretched film in line.

Considering the continuous growth of this product and **till today not completely resolved solutions for in line production of the same**, COLINES® took on a challenge and designed the **PRErollEX®** line which is smoothly running pre stretch film production with maximum winding speed over 1000 mt/min.

Clearly PRErollEX® line could produce also normal stretch film and as the tendency of downgauging is in continuous increase due to high speed of winding it is practically possible to reach the output of conventional 1500mm wide line when running thin film

PRErollEX® concept is based on extrusion group of three small and one medium size extruder with feedblock for 5 layer film production.

The exact size of extruders is based on the type of the production so if pre-stretched film is the main product, **the extruder size is smaller than the line which will produce also standard stretch film.**

Layer stratification divides the layer with recycled trims in 2 inner layers while core (functional) layer and two skin layers are extruded from virgin resin.

All extruders are heated with IR technology in order to reduce electrical energy consumption, while for trim recycling **COLINES® BIGMOUTH®** cold refeeding system allows recycling of 50% of the gross production of the main extruder with an energy consumption of 4 kW/h max.

COLINES® is proud to introduce the PRErollEX® concepts at the K2016 in Düsseldorf; **with this presentation other frontiers in stretch film production are successfully achieved.**



ALLWRAPPER®

PACKAGING REVOLUTION

ALLWRAPPER® is the new revolutionary packaging system engineered by COLINES®. It uses stretch film as substrate to perform bundle-wrapping over a huge number of different products.

Being manufactured and optimized for the beverage industry, it has been extended in more applications on food, cosmetic and pharmaceutical industries with different machines in the range. The system can handle the packaging of bottles, cans, pots or bags made of different materials (plastic, carton, metal and glass).

Whilst for some applications the unnecessary use of a shrink tunnel comes as the only cost effective solution to secure products in bundles (i.e. water), in some other areas the heat generated to let the conventional film shrink around products represents a risky process (i.e. oil or gas pray) or even does not permit to use plastic as protective/logistic envelope (i.e. use of carton packaging in pharmaceutical).

Similarly to what happened in terms of the evolution on pallet protection, from shrink film to cost effective stretch film pallet wrapping, product-bundling by means of stretch film is an attractive solution to start saving on electricity and packaging.

ALLWRAPPER® packaging system is covered by several patents and has been engineered with modular concept. There are two basic machines that differentiate each other by the way of running. Whilst the **ALLWRAPPER®** BASIC runs by cycle (at each cycle the products are getting bundled), the **ALLWRAPPER®** AUTO wraps rows of products in a continuous envelope that is separated in bundles at the end of the process.

Regardless of the machine used or the product to be bundled, the mechanical characteristics granted by the stretch film along with the intrinsically money-saving wrapping process (avoiding shrink tunnel), permit an outcome of more than 50% saving on packaging material and more than 90% saving on energy consumption.

AS COLINES® WE ARE PROUD TO SHARE WITH OUR ESTEEMED CUSTOMERS THIS SUSTAINABLE SOLUTION AS A FUTURE CHALLENGE TO EMPLOY THE LEAST POSSIBLE RESOURCES, NO MATTER IF PLASTIC OR ENERGY.



A showroom at our facility shows live demonstration of **ALLWRAPPER®** technology with different products. Customers can attend under the same roof extrusion tests made on **ALLrollEX®** cast stretch film lines as well as the subsequent application on the bundle-wrapping **ALLWRAPPER®** system. It comes natural for us to invest on laboratory equipment to technically evaluate the bundle stability, thus allowing us to perform pre-marketing activity including the selection of the right film to be used for the bundle packaging.

CONTINUOUS DEVELOPMENT AND LATEST SUPERB SOLUTIONS IN **CPP** FILM EXTRUSION BY **COLINES®**



Cast extrusion plastic processing method involves creating fluidity by heating thermoplastic polymer material, which is then extruded through the T-Die in a thermal molten state to form a film, cooled and solidified through the cooling rolls, corona treated to yield a product and finally wound up in single or multiple reels.

Thanks to continuous investments in research & development in CPP film extrusion technology, COLINES® is opening new frontiers and standards in this technology, maintaining its global market leadership for CPP film extrusion lines.

THE **2AB®** SYSTEM

Some solutions developed and implemented by **COLINES®** in **CPP** lines are widely known and unique around the world, such as the **2AB®** dual blade system instead of the standard vacuum box employed by all other suppliers.

2AB® blade has been further refined, proving to be the best application for the production of CPP film, as it combines the advantages of the classic suction air blade with the characteristics of the traditional double-chamber vacuum box.

The **2AB®** system is able to remove a quantity of air, including smokes and waxes, which is 3 times higher if compared with the theoretically guaranteed value by even the latest solution of the vacuum box with the use of different fans with different speeds on each chamber.

This peculiarity of **2AB®** system permits, beside the improved cleaning effect, a superior refrigeration and thus better haze and gloss, reduction of the melt instability and perfect adhesion of the film to the first chill roll.

All this results in an improvement of the film stability on the cylinder at high speeds and a film solidifying process equally distributed on the complete film width; these features are extremely important to achieve excellent optical/mechanical characteristics of the film with higher production capacity of the line.

The dynamic vacuum obtained by **2AB®** system results in a perfect flatness of the film without any longitudinal stripes or wrinkles on the film.

REELAX®

One of the most demanded features for **CPP** film is transparency, which can be influenced by factors such as resin MI, extrusion temperature, cooling temperature... etc.

COLINES® this year presented the state-of-the-art thermal conditioning chill roll unit **REELax®** designed for film cooling and solidifying during **CPP** film production.

Thanks to this innovative system, during the extrusion the film undergoes a short annealing and stretching, as a result the mechanical properties of the **CPP** film can be more than doubled.

Thanks to its modular design **REELax®** units are available in versions from 4 to 6 thermo-conditioned cylinders depending on the type of the **CPP** film to be produced.



THE INNOVATIVE CALENDER UNIT

In addition, **COLINES®** has also developed a very innovative system for the production of high thickness **CPP** film up to 400 microns, consisting in a sort of calender unit applied directly on the cast trolley.

This solution guarantees top quality CPP film production in the range from 18 up to 400 microns.

Another issue that will certainly have a bright future is the production of very thick film with the aid of an equipment, which has already been installed on the cast group of a line sold to one of our customers in Asia and now in full operation. This solution, simple and reliable in itself, constitutes a real revolution in the CPP world as it introduces a number of concepts which are known in other sectors but had never been applied to cast film extrusion.

THE FLEXIWIND® WINDER

The latest **CPP** line installations at **COLINES®** customers confirmed the success of new **FLEXIWIND®** winder, especially designed for high production speeds, aim needed for the next goal in **CPP** film production: downgauging.

This winder, with independent shafts movement and separated motorization of each shaft, is working in contact mode and not in gap as other winders for **CPP** film production, thus giving the possibility of tension control on 5 different positions of the film path in the winder, while the contact roll pressure is pneumatically adjusted, according to the reel diameter.

FLEXIWIND® allows for a maximum winding diameter increased up to 1200 mm in single reel production, while bleed trim is used for roll separation in multiple reel production.



#FLEXIWIND®



REC&FEED® RECOVERY SYSTEM

All **COLINES® CPP** lines are equipped with a unique **REC&FEED®** trim recovery system, so this increase of the trim using the bleed trim is not disturbing the extrusion process at all as **REC&FEED®** system allows to recover in line up to 35% of the main extruder output.

THE NEW UNLOADING SYSTEM

A new unloading system for finished has been developed, allowing automatic roll unloading from the winder and automatic shaft extraction from the roll, including fully automatic extractor research for the shaft, so whatever is the roll diameter the extractor will position itself exactly on the shaft.

THE HIGHEST SPEED ON THE MARKET

For a long time now, production speeds up to 400 m/min were possible only on **COLINES®** lines, and thanks to continuous investment in development and research, **COLINES®** lines today are permitting even to talk about higher productions speeds in **CPP** extrusion, so over 400 m/min.





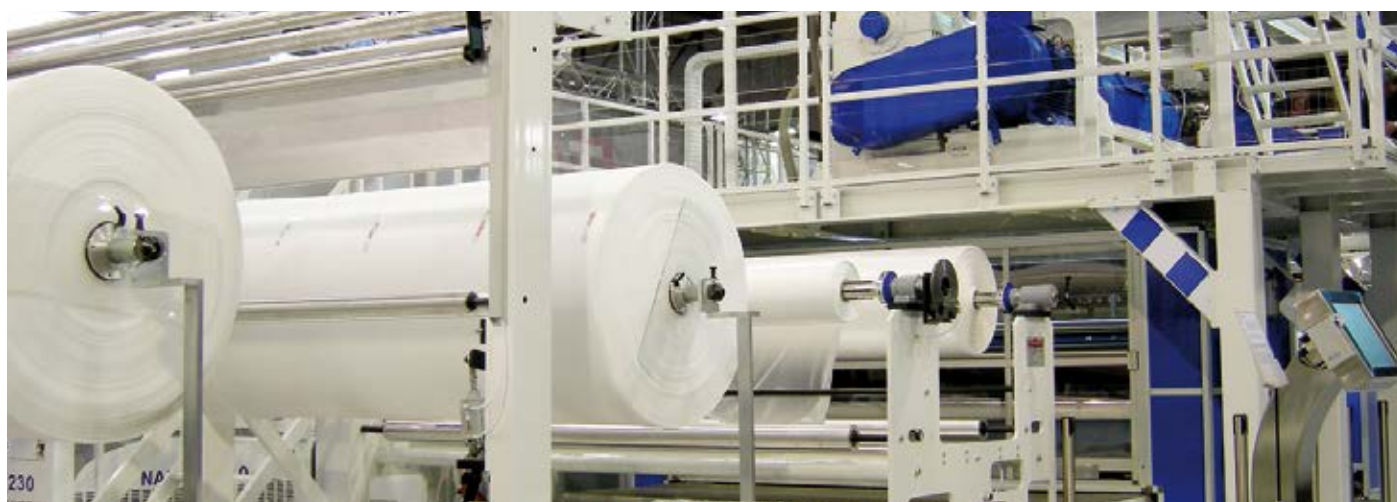
#AIRBUBBLE

NATALE FERIOLI

THE NEW COLINES® AIR BUBBLE ENTITY

COLINES® Air Bubble, located in Bastia Umbra (Perugia) was established in 2016 by **Gruppo COLINES® Holding**.

Historically **COLINES®** was the first company to develop and make popular, since the late Sixties, the technology for the production of **Air Bubble** film directly from the resin. Since then, **COLINES®** has always focused on improving their specific know-how, thus selling all over the world hundreds of lines for mono and coextruded film as well as converting machinery for a variety of products/applications for protective packaging, in different models and production performance. At the end of February 2016, **Gruppo COLINES® Holding** seized the opportunity to take over the design and manufacturing activity of lines for the production and converting of air bubble film from Torninova Srl, establishing **COLINES® Air Bubble**, based in Bastia Umbra (Perugia). With this new facility, **Gruppo COLINES® Holding** aimed at improving their production capacity, expanding their already broad customer base across all continents and consolidating their technical and technological leadership worldwide.



This new synergy has already given very good results, with the sale of three big lines:

COEX BUBBLE 2600

A complete 10-layer (5 + 5) line using a twin-screw main extruder to process a vast range of virgin and recycled materials with an hourly throughput of 1000 kg. This line is destined to the North American market and will be shown in an open-house in December 2016/January 2017.



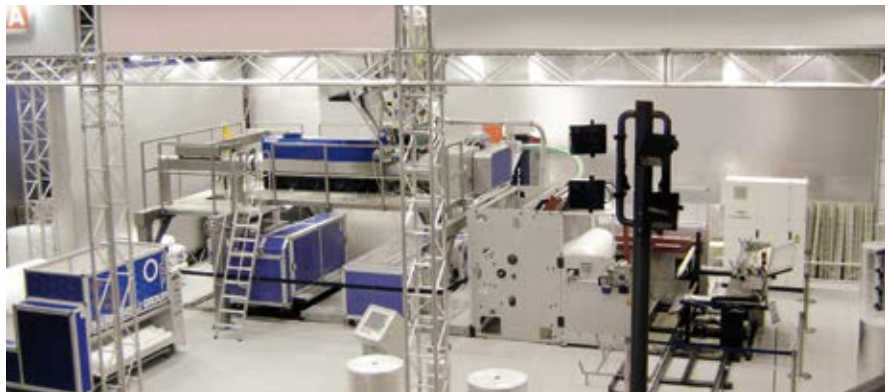
POWER BUBBLE 3000

Is a monolayer destined to Australia, equipped with a twin-screw extruder with a throughput of 1000 kg/h.



POWER BUBBLE PLUS 1500

For the Latin American market, specifically designed for the production of PP Air bubble film.



In the meantime, the orders for the rewinders 'CORELESS 1250' from Spain and the two 'CORELESS 1600' from Eastern Europe have been already carried out. The new entity, supported and coordinated by **COLINES®** S.p.A, employs approximately 20 people and has got at disposal 2000 m² of buildings.

Considering the large number of Customers already served by the former Torninova and by **COLINES®**, the new company **COLINES® AIR BUBBLE** stands out as the top machine manufacturer in this sector, with excellent prospects for the future.

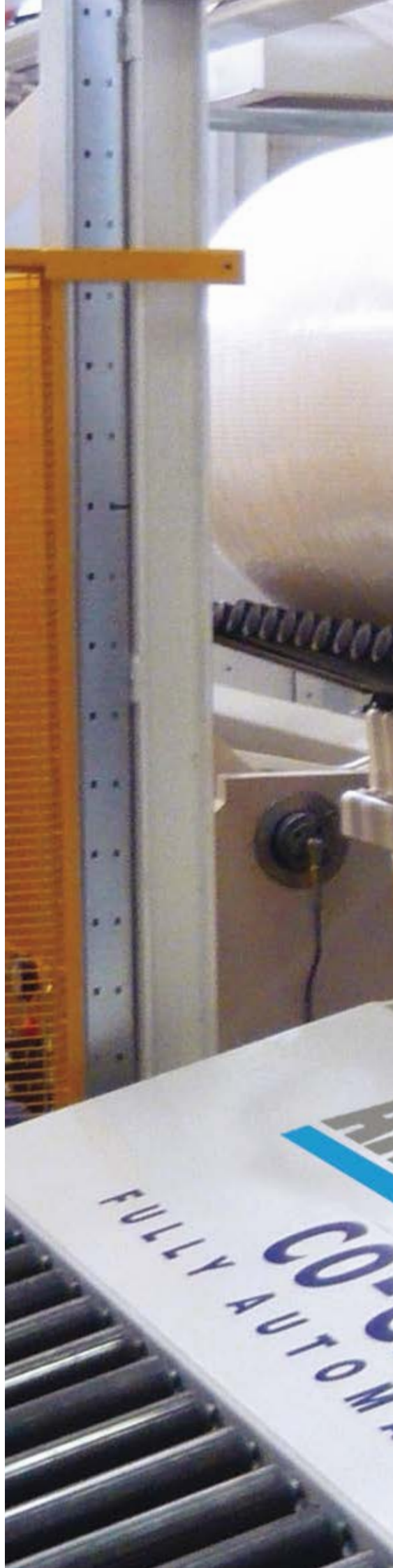



THE SUCCESS OF AIR BUBBLES IN THE AMERICAN MARKET

During the last three years the market of high-end **Air Bubble** film lines has experienced a steady growth. Thanks to the worldwide terrific growth of the e-commerce, the requirements for high quality packaging solutions to protect goods have breathed new life to the **Air Bubble** film business, pushing manufacturers to enhance their current products.

USA is definitely the most growing and mature market from this point of view, having a strong base of sales through the web that counts over 15% of the total annual retail sales. Many customers have been very keen to recognize the advantages coming from the purchase of a high performance line manufactured by **COLINES® Air Bubble**, leading worldwide manufacturer of **Air Bubble** film plants. From the East to the West Coast of the United States, **COLINES® Air Bubble** has sold the full spectrum of their machineries for **Air Bubble** film production in the last few years. With reference to the In-line production of **Air Bubble** film starting from pellets, we can count two of the most advanced lines that **COLINES® Air Bubble** has ever manufactured.

In operation since 2013, the first in the world 14 layer (7+7) with encapsulation system **Air Bubble** extrusion lines has been another milestone for **COLINES® Air Bubble** in the market. The very complex coextrusion structure has been studied together with the customer to get extra features out of the already extremely good film. A fully automatic slitting system together with line production speed over 100 m/min are completing the design of this **Air Bubble** film plant. To be commissioned early 2017, our high performance **COEX BUBBLE 2600** extrusion line 10 layer (5+5) is destined for the massive throughput of 1000 kg/h **Air Bubble** film! Strong point of the extrusion line is the use of a twin screw extruder as main extruder allowing the processing of a wide range of resins (both virgin and fully recycled) resulting in outstanding film quality. A fully automatic 3-shafts winder with glueless/tapeless mode and coreless option is included in the machine configuration. With reference to the off-line production of **Air Bubble** film starting from rolls (thermoformers), our long term customer have installed nr. 3 additional equipments in 2016 with a great satisfaction for the quick commissioning and start up time. Our off-line production lines for **Air Bubble** film are very well known for the very high speed production rate (up to 100 m/min during day by day production) and the quality of bubble formation/shape. All the lines delivered to the USA have also in-line hot oil lamination unit that allows lamination of different substrate to the **Air Bubble** film with NO production speed limitation and without the complexity of the typical lamination unit done in extrusion. Further to the new Group structure, **WELDING MACHINERY** operation will work under the unique name of **COLINES® Group** and the first sale of the new era has been the top of the range of **WELDING MACHINERY**. The new machine will be installed in a fast growing company based in West Coast USA that was already tremely satisfied by the previous supply of a machine of this kind.





The welding machine has been fully customized under customer requirements to comply with all production needs of the customer working in high end products. A very wide range of different bag sizes and sealings can be done on the machine with extremely fast setting up time. Last but not least, starting from November 2016

COLINES® has opened the US subsidiary **COLINES®** Corp. based in Long Island, NY. Our current and future customers will benefit from a direct field service on all our extrusion lines with resident engineer coming from **COLINES®** Italy and a warehouse for spare parts ready for immediate delivery.

We are all inviting our customers, not only from North America but also from the rest of the world, to visit **COLINES®** factories in Italy and experience our high level of technology in the production of equipment.

If you are interested in the **Air Bubble** film market, **COLINES® Air Bubble** is the right partner to develop your future activities.

#BUBBLE GUARD® BOARD

FLEXIBILITY FURTHER EXPANDED

The product line called **BUBBLE GUARD® BOARD**, patented by **COLINES®**, is already well-known by the market and we can proudly say that it boasts various attempts of imitation. The peculiarities of this product are leading to its exponential and capillary spreading in a wide variety of application fields, from automotive components to packaging, from advertising to floor protection, and many more.

The undoubted flexibility of the **BUBBLE GUARD® BOARD** extrusion line has been further expanded with the latest version designed by **COLINES®**, which provides for the use of three independent extrusion units for the three sheets that make up the final board, thus giving the user the opportunity to freely manage the raw materials and consequently the technical features of the final product. Furthermore, the use of a special trim recovery system applying an innovative logic permits an extremely flexible management of the final width, without affecting the mechanical characteristics of the finished product in any way, always with a very limited specific consumption.

The thickness of the three sheets can be calibrated and adjusted during production, and this aspect permits to obtain a practically perfect planarity of the final board,

regardless of grammage and size of the thermoformed bubble.

In addition, **COLINES®** is studying the application of a twin-screw extruder for the production of the core layers of the three sheets, which will allow the producer to employ also waste materials from different processings and even powder inorganic fillers, with a consequent remarkable reduction in the cost of raw materials.

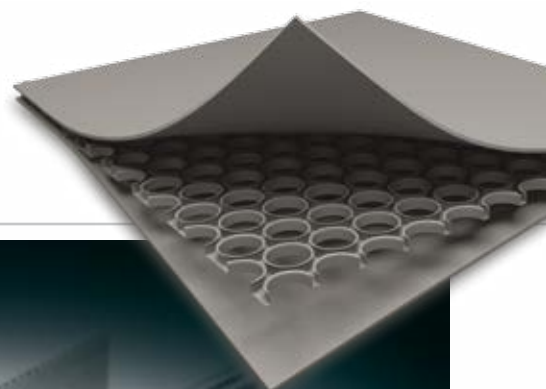
The new layout studied by **COLINES®** is ready for the insertion of a second forming calender, making the line also suitable for the production of a so-called counterposed "double bubble" board, a solution that exponentially increases the mechanical resistance of the final board while reducing its specific weight and therefore its cost per square meter.

Another option is the possibility to install on the line a forming cylinder with double male-female shape, for

the production of particularly thick and light boards.

In addition, **COLINES®** has developed a simplified version of the **BUBBLE GUARD® BOARD** concept, called **BUBBLE GUARD® Simplex**, ideal for the production of medium-low grammage boards (up to about 1500 gsm), characterized by a very compact and rational layout.

With this version the production flexibility and the quality remain unvaried, though referred to more circumscribed applications, where there is no need for a particular mechanical resistance, especially in terms of flexural strength.



HYGIENIC FILM TECHNOLOGY

The market of the film for hygienic applications is experiencing a strong growth, also thanks to the continued improvement in the wellbeing of the developing countries, becoming aware of the possibilities and advantages offered by this type of film. Just think about realities such as some countries in South America rather than India, to understand the huge potential associated with this particular market segment of the flexible packaging.

In the hygienic film sector it is possible to distinguish three key product groups, i.e., in order of “value”:



CLOTHLIKE

Lamination of a WNW with a simple coextruded PP/PE

EMBOSSED FILM

(typically PE but also with a certain percentage of PP in case of extremely low grammages) whether laminated with WNW or not

BREATHABLE FILM

(typically PE but also with a certain percentage of PP in case of extremely low grammages), always laminated off-line with WNW

COLINES®, availing itself of a more than twenty years' experience, is able to meet all the above requirements, having being involved in the first projects of hygienic film at different customers; in particular the development of an MDO mono-stretching unit is one of the central pillars of the **COLINES®** production, which is always attentive to market demands trying to anticipate its requirements.

On this subject, exactly in this period an innovative MDO unit is in test phase; this unit revolutionizes the classical parameters of the sector, thanks to a special stretching system that radically changes the foundations known so far. In addition, a new heating system of the cylinders by IR heaters (patented by **COLINES®**) has been implemented on this unit, and drastically simplifies the system as well as the maintenance and cleaning operations typical of these applications, which represent a great limitation in terms of functions and performances of the system.

Upstream of this unit, which in itself already deserves great interest, as mentioned, also the film extrusion and cooling phase have been object of several studies, as many final characteristics of the stretched film anyway derive from the way the original film has been formed; for this reason, **COLINES®** has devoted energy and resources to designing a cast unit equipped with several devices suitable to minimize the defects of the film that emerge once it has been stretched, and often derive right from an improper or inadequate cooling process.

Even more important, in a way, was the analysis of the production of embossed film. In this application all the product characteristics (net of raw materials) are connected to the cooling and embossing process, which, needless to say, currently presents various issues, above all in case of low

grammage film and (consequently) high speeds.

The study carried out by drawing on the experience developed in decades of activity in various fields of extrusion has led to the definition of an innovative system applied to the cast unit, which will be tested and validated in the next few months.

Of course, the common purpose of the studies conducted in both sectors (breathable and embossed film) is to increase the line performances in terms of speed, especially when processing very low grammages, as nowadays they guarantee truly excellent performances, thanks to the concurrent and unstoppable progress of raw materials.

In this respect, **COLINES®** has been cooperating for years with many of the major raw materials producers, making its lines available to these players and thus joining forces in order to perfect together extrusion lines and high performance resins; this is a further added value that **COLINES®** can offer to its customer: the guarantee of a state-of-the-art and leading edge mechanical and electronic equipment combines with a constantly updated technological support.



COMPANY NEWS

MR. ERALDO PECCETTI AWARDED AS “NOVARA CITIZEN OF THE YEAR”



We are proud to announce that our President Mr. Eraldo Peccetti has been awarded the prestigious prize of “Novara Citizen of the year” 2016.

This reward is assigned every year by the Novara City Council committee composed of the Mayor and of representatives of Industrial and Artisans associations, Regional Education Department and media) to those citizens who have specially distinguished themselves by their professional results, thus expanding the prestige of the city of Novara. The award ceremony “Sigillum Communitatis Novariae” took place last 21st of January in the historic building of Broletto in Novara.

With this honorary title the Novara City Council recognized Mr. Peccetti's personal commitment in developing **Gruppo COLINES® Holding** and **B-PACK® Holding SpA** and in reaching outstanding results with both companies.

All the **COLINES®** team is proud of such an important award for Mr. Peccetti, who has been also engaged in local community social projects for many years and actively supports public events, local associations and sport teams.

COLINES® USA CORP

Gruppo COLINES® Holding keeps on growing and announces the opening of a new company, **COLINES® USA Corp.**, based in Hauppauge, Long Island, State of New York. Through **COLINES® Corp. USA**, **COLINES®** is establishing a strategically important hub for the growing market in North and Central America as it is located close to numerous existing customers, ongoing projects and historical business partners. The new company will be fully operational starting from November 2016 and will enable **Gruppo COLINES® Holding** to provide faster response times in local support. A resident technical staff will be a full-time presence and will guarantee shorter travel distances.

“I am very happy to announce the opening of our company in the USA” states Mr. Eraldo Peccetti, CEO and partner of Gruppo COLINES® Holding. “We have selected the State of New York as the best location because it is one of the best technological pole in the USA and can be easily reachable from all destinations. This marks a major milestone in our company growth in the North American markets.”

EXTENSION OF THE PLANT AT IMBALLAGGI PROTETTIVI

The significant enlargement of the plant at our associated company Imballaggi Protettivi has been successfully completed. The new 2500 sqm complex is now fully operative and is dedicated to the converting of BUBBLE GUARD® BOARD sheets produced on COLINES® lines.

Imballaggi Protettivi is constantly involved in the development of new applications and research of different solutions in several fields (packaging, automotive interiors, graphics, building and glass works), thanks to the availability of sophisticated equipment always state-of-the-art. The equipment in operation at the new plant include:

Digital printing

Cold die-punching

Hot die-punching with edge-sealing

Press-mould

Sealing head by head

Plotter for shaped cuts

#INTRODUCING

COLINES® is glad to introduce some new resources who recently joined us.

COLINES



FABRIZIO CASTELLARI
General Manager



MIRKO BERDONDINI
Sales Area Manager



FULVIO FERRARA
Account dept manager



ELENA GROSSINI
Account dept



DANIELE SIMONELLI
Purchase dept



FABIO TORCHIO
Technical dept

COLINES® AIR BUBBLE



CRISTIANO CERULLO
Purchase dept



NICCOLO' GIANNOTTI
After-sale service dept



ESTER MENCARELLI
Account dept



COLINES® AIR BUBBLE manufacturing team at Bastia Umbra factory.

INNOVATIONS IN THE FIELD OF GASKETS

Large innovations have been implemented by **COLINES®** in the field of profiles for refrigerator gaskets both in soft PVC and TPE. A new coextrusion line for rigid and soft PVC came into operation. This line is boasting a high production speed and is particularly innovative in the calibrating section, which is separate between rigid PVC and soft PVC. Another state-of-the-art feature of this line is the tried-and-tested quick guillotine shear which permits to cut very short profiles. This line expands the manufacturing range offered by **COLINES®** in a fast-growing sector.



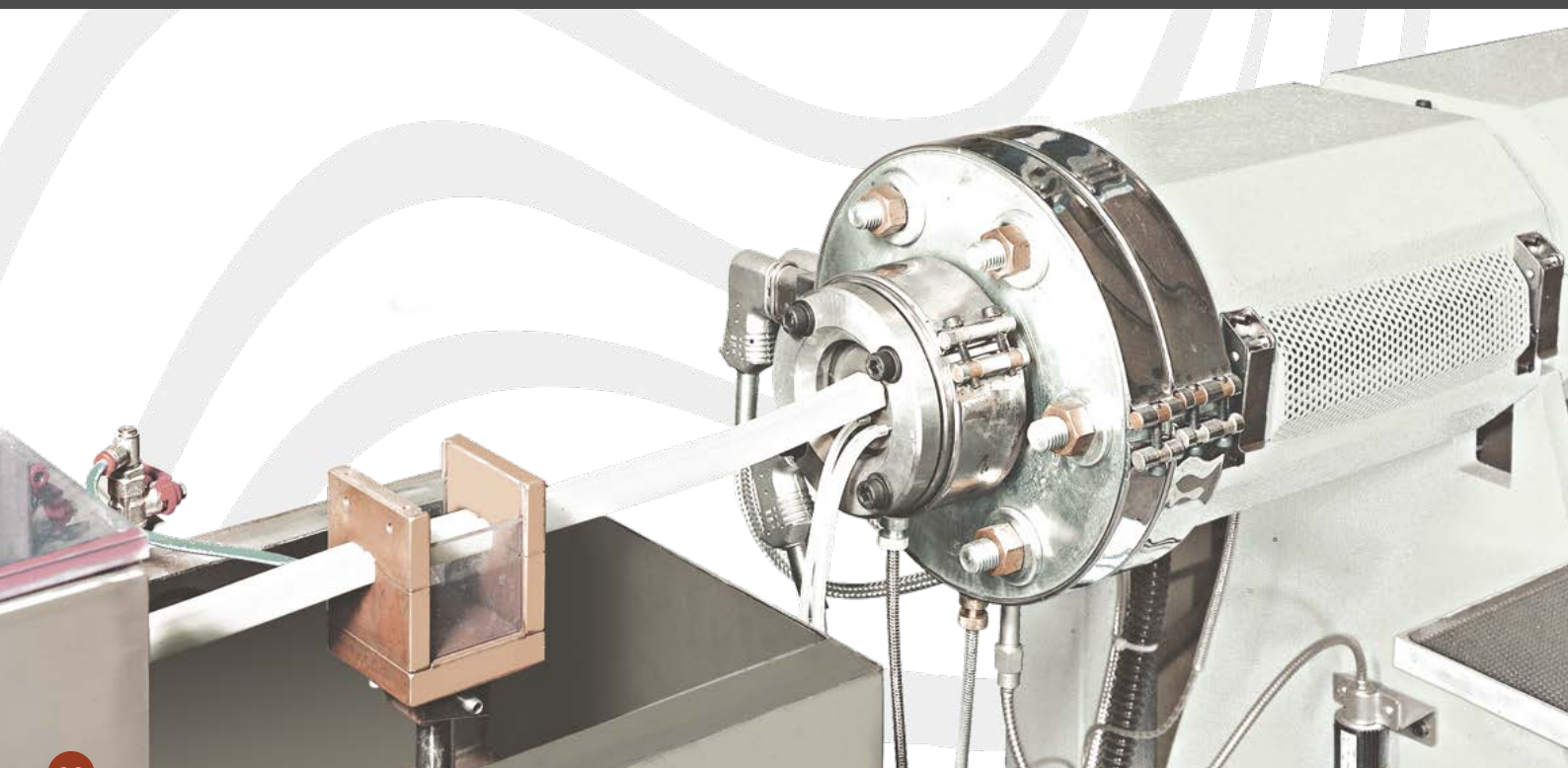
The extrusion lines for magnetic strips have been equipped with a new thermoregulation technique of the extrusion barrel with electric heaters, which replaced the diathermic oil system, in order to simplify both control and maintenance of the heating unit.

From the commercial point of view, of particular emphasis is the significant sales increase in the North European, Lithuanian and Romanian markets of complete extrusion lines as well as extrusion and sealing equipment. Worthy of mention is also the continuous expansion of new establishments in North Africa for the manufacture of refrigerators, with the acquisition of orders and turn-key equipment with high production capacity, especially in Egypt and Algeria.

No less important is the opening of the new market in Bangladesh, with the supply of PVC and magnetic strip extrusion lines, units for inserting magnetic strips into the gaskets and welding machines.



#GASKETS



#SECOND HAND

SAŠA DAVIDOVIĆ

IF SECOND HAND IS YOUR CHOICE

Our mission in **COLINES®** is that each of our customers, thanks to machinery purchased from **COLINES®**, increase its business and grows continuously.

In order to help their growth and reduce the investment for a new line, sometimes, upon customers' request, we trade in their existing **COLINES®** lines: after being reconditioned by **COLINES®** technicians, this second-hand lines are offered to a new customer. With this operation **COLINES®** helps existing customers to reduce their investment for capacity increase and also gives the chance to newcomers in plastic extrusion to start their own production with a limited investment and a reliable machine. Once back to **COLINES®**, the lines are completely revamped and restored to the original production conditions.

SEVERE CONTROLS AND UPGRADE TESTS TO THE SINGLE COMPONENTS ARE DONE ON EACH LINE AND IN PARTICULAR:

Automatic replacement of all those components for which spare parts are not available any more.

Complete disassembly of each machine component up to the supporting framework.

48 efficiency controls (no. 48 detailed technical checks of all the machine)

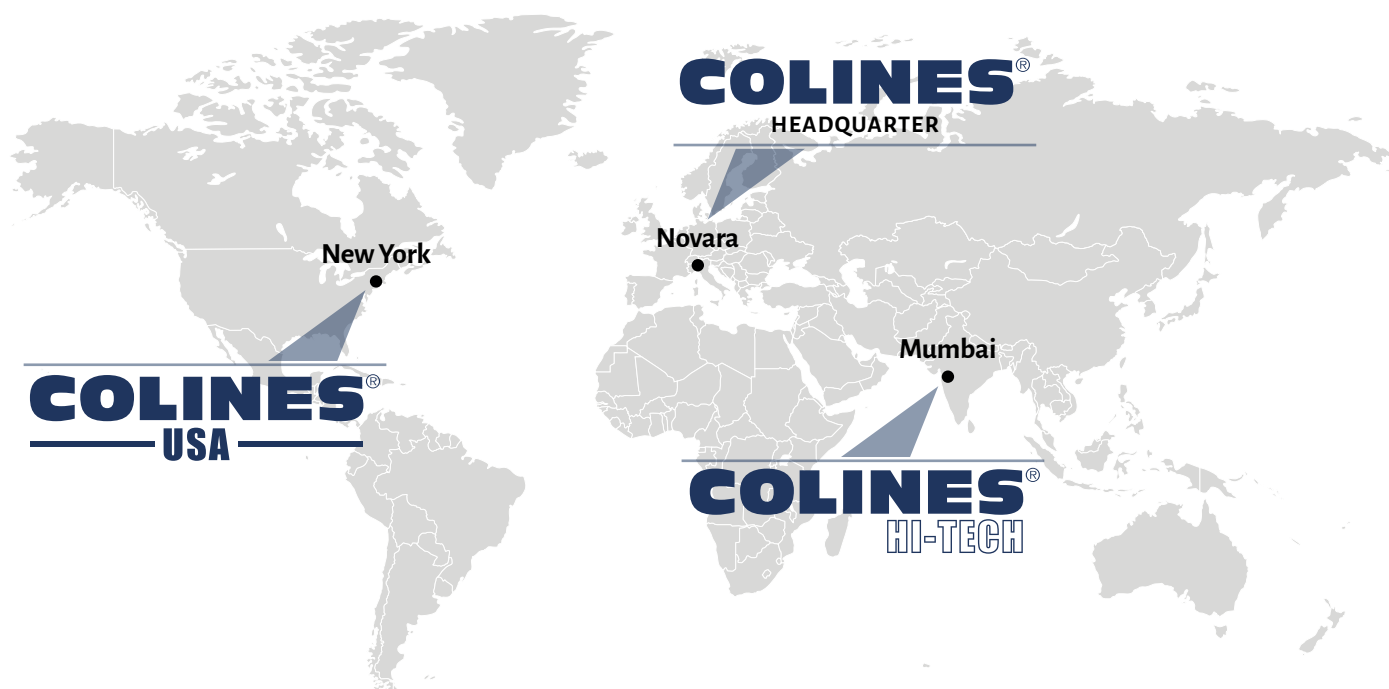


For the complete list of the second-hand machines available, please visit:
www.colines.it/extrusion-lines/en/services_used_new.aspx
or scan the QR code.

MIRELLA MASTRANTONIO

ON-SITE AFTER-SALE SERVICE

Services for regional areas, together with a central headquarter, providing all necessary support and fulfilling the needs and demands of the customers round the clock, thus guaranteeing a successful functioning of our extrusion lines.



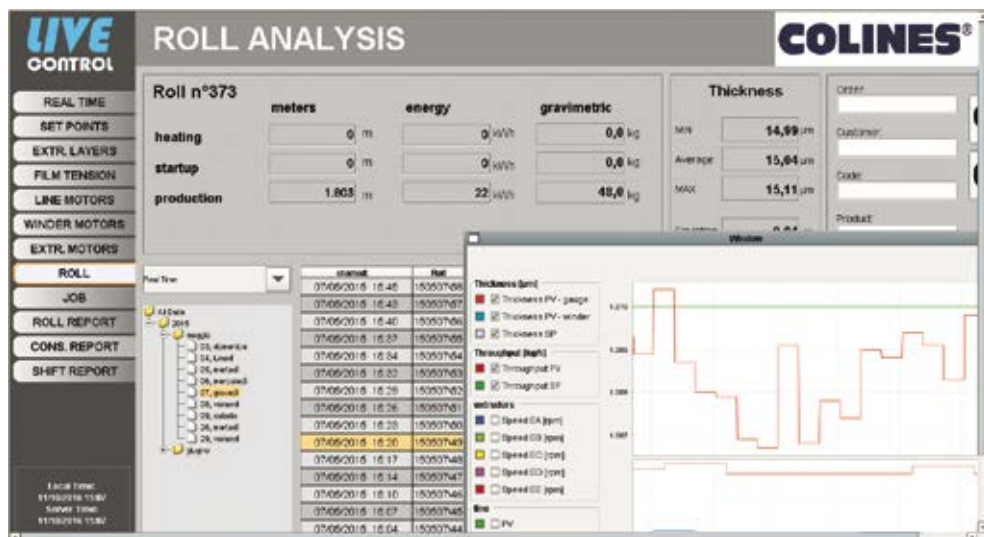
ELAV[®] AUTOMATED SOLUTIONS

ELAV[®] has been working in the field of **industrial automation** for **more than 30 years**, gaining a leading experience in **plastic extrusion lines** and wire/cable manufacturing.

During the years, we have continued to strengthen our customers' competitive edge by providing **innovation and reliability** in our support of their production activities thanks to the use of first class automation equipment and to a team of skilled engineers: our strong focus on **process optimization and quality enhancement** helps customers increase their productivity and efficiency while at the same time **maximizing earnings**.



TOTAL PRODUCTION UNDER CONTROL



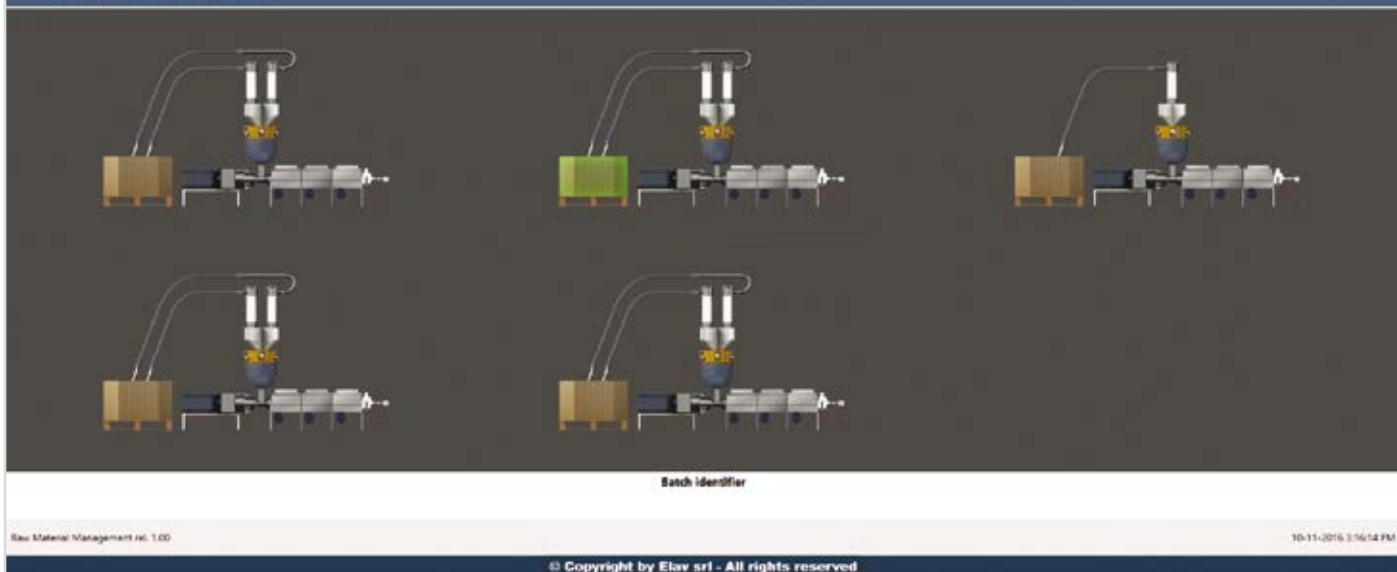
In 2015, the introduction of **Live Control**, **ELAV[®]**'s tailor made MES module expressly developed for plastic extrusion lines, was a great success to help our customers to **optimize productivity** and **enhance the quality and traceability** of their products.

Over the last year, **ELAV[®]** boosts the development of its Live Control, to give customers new features that makes possible a **complete traceability** of the final product from the raw material batch identifier to the web defect tracking on every reel (i.e. when a web defect inspection system is available).

Our enhanced interface with third party ERP software makes possible a total control of the production, **reducing the possibility of human mistakes** to the minimum level.

By means of **Enhanced Recipes module**, production parameters (i.e. recipes) can be uploaded directly to the line HMI from an external ERP or retrieved from a production order in paper format using a QR code reader. Once the parameters are loaded, the operators will be allowed to make the new setup of the machine, that will be compliant to the requirements: any misalignment will be promptly signaled as warning.

Material identification



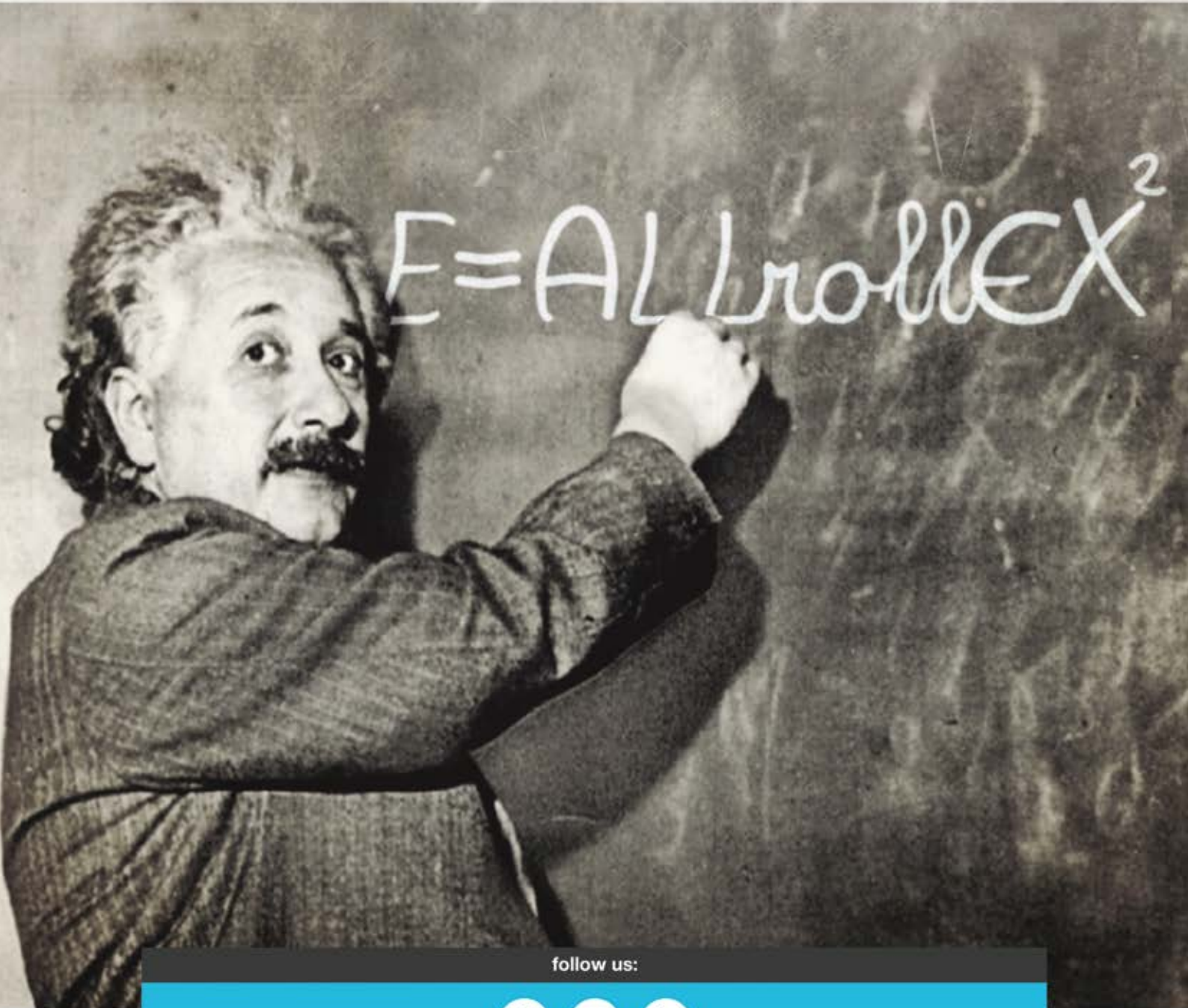
With **Raw Material module**, line operators will be guided to use the correct material for the correct production. Once an operator acquires the product code and batch identifier of a material (e.g. coming from the label present on the material bags), **Live Control** interfaces the ERP to check if the materials are quality checked (i.e. materials typically are accepted prior to be stocked in the warehouse), if the check goes fine, the operators select the suction pipes identified from an unambiguous identifier read from a QR code reader and Raw Material module checks that the material used is coherent with the recipe; if an error is identified the system warns the line manager to act the proper actions. All data (i.e. material name, batch identifier) are stored in Live data base and associated to the final product.



Using **Defect Tracking module**, interfaced with third party web defect tracking system, it is possible to monitor the defects of every reel and collect the relevant data in Live database to make possible a fast and reliable quality check, thus providing improved auditing capabilities and efficient scrap management.

With software features that make doing the right thing the easiest thing to do, we enable you to improve quality compliance and reduce quality losses, while increasing product yields. Get a global coverage of your shop floor and experience improved quality, efficiency, traceability, productivity and profitability. All of this with **Live Control** by **ELAV®**.

“ NEVER LOSE A HOLY CURIOSITY ”
ALBERT EINSTEIN



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THE POWER OF SYNERGY®

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