MACPLAS INTERNATIONAL

MP

THE MAGAZINE FOR THE PLASTICS AND RUBBER INDUSTRY

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ITALIAN MACHINERY - SHADOWS AND LIGHT AT THE HALFWAY POINT ■ PLENTY OF POTENTIAL FOR RECYCLING ■ TECHNOLOGICAL DEVELOPMENTS APPLIED TO INJECTION SYSTEMS ■ PLASTICS EARN THEIR TRAVEL TICKET

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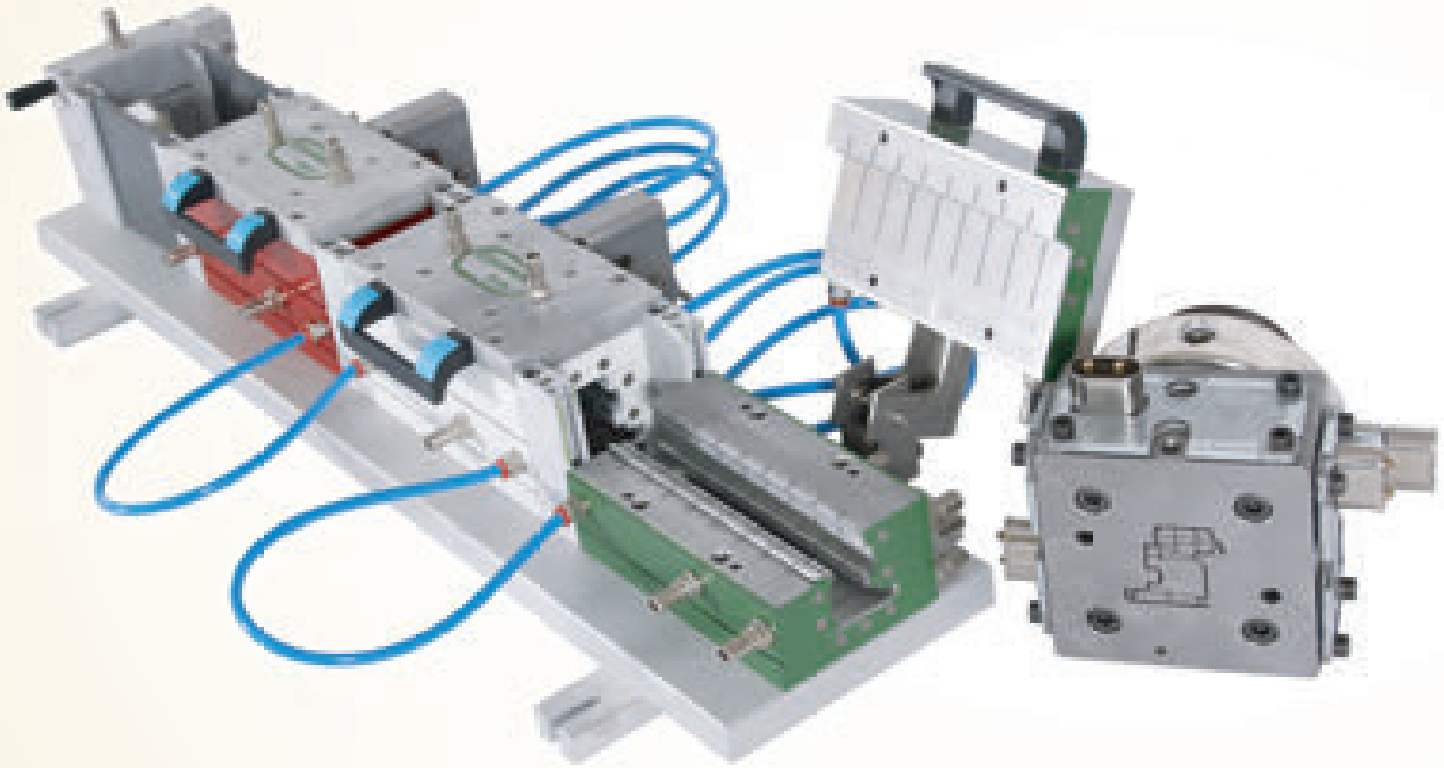

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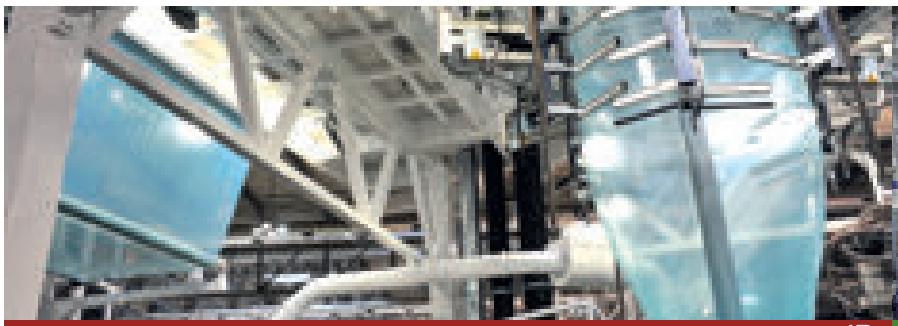

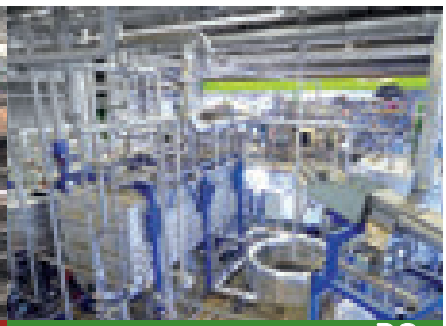

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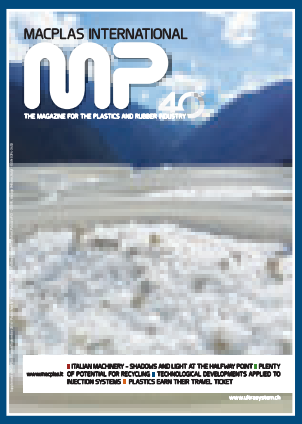

COVER STORY

Choosing the right purging compound

The use of purging compounds is spreading quickly amongst plastic processors. They all know well the issues associated with colour and material change operations, such as stripes and black specks. For quality reasons, these elements are the source of important losses in terms of material, time and money. Plastics processors need to use a good purging compound that will help them deal with these issues, while optimizing productivity.

Most purging compounds available on the market work through mechanical action. In other words, they contain glass fibres (or any other abrasive substance) that will remove residues by scratching them off the metallic surfaces. In the long run, these abrasive actions damage the screw and even facilitate greater deposits in the scratches they made on the screw. In sum, abrasive purging compounds might lose some attractiveness in the long run.

Switzerland-based Ultra System (booth D89, hall 13, at K 2016) focuses only on the creation and manufacturing of purging compounds. It is one of the few players on the market that offers a complete range of non-abrasive products that will not damage the metallic surfaces of the processing machine.

Their products, sold under the brand name Ultra Plast, gently clean all residues present on the screw and in the barrel through a chemical action, leaving screw and hot runner system completely intact.

For the most demanding processors, Ultra System developed a new series that guarantees a much higher purging efficiency thanks to the updated formulation: the Quali-purge CS. This line includes PO-CS and POE-CS (designed for polyolefins), High-CS (for transparent materials), HT-CS (for polyamides, PEEK, APEC and PEI), the PET-CS and the brand new BF, created especially for colour changes with a running bubble in blown-film machinery. With different products for different applications, Ultra System certainly has the most suitable solution to processor problems.

Last but not least, all Ultra Plast grades are FDA certified and apply to EU food regulation CE 10/2011 and can be used in white rooms for medical, pharmaceutical and cosmetic production.

www.ultrasystem.ch

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August/September 2016

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HAPPY BIRTHDAY MACPLAS!

As suggested by the logo on the cover, 2016 marks the 40th anniversary of MacPlas. With a constant presence in the technical press field, the magazine can today boast being one of the most long standing publications dedicated to the plastics and rubber industry.

Registered at the Court of Milan on February 13, 1976, MacPlas is the result of an idea by Claudio Celata and Gino Delvecchio, who directed the publication for more than 35 years, steering it, in more recent times, towards the digital age.

The official celebrations for the 40th anniversary took place on June 28, in the splendid setting of the Relais Franciacorta hotel in Colombaro Corte Franca, near Brescia (Northern Italy). There were a host of guests present at the event, which was held at the end of the annual meeting of Assocomaplast, including some of the advertisers that appeared in the first issue of MacPlas and that are today still active, as well as the former editor in chief Gino Delvecchio, who run it until 2012. As a tribute to their commitment to the success of the magazine, all of them were presented with a commemorative plaque by Mario Maggiani and Riccardo Ampollini, the current managing director and editor in chief respectively. This, however, was only one of the many events featured in the celebrations, which was rich in memories and anecdotes and which was concluded with a dinner in the company of various Assocomaplast members, as well as the current advertisers and contributors of MacPlas.

During the past 40 years the publication has proved able to follow the trends of the editorial market, without ever losing touch with its original philosophy: that of being an information sharing instrument with a special focus on the accuracy of its content. This has allowed MacPlas to acquire its truly authoritative reputation which has been the basis of its further evolution.

The result is the steady growth of the Italian edition, but also of the many editions in various foreign languages, ranging from English to Chinese, with the aim of informing the world of the intrinsic value of the technology made in Italy. The magazine has also immersed itself in the digital era, with an online version and three weekly newsletters, two in Italian and one in English, circulated to an audience of no less than 30,000 readers.

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SHADOWS AND LIGHT AT THE HALFWAY POINT

THE ITALIAN TRADE ASSOCIATION ASSOCOMAPLAST, MEMBER OF CONFINDUSTRIA, HAS DEVELOPED ISTAT (ITALIAN NATIONAL INSTITUTE OF STATISTICS) FOREIGN TRADE DATA FOR THE SECTOR IN THE FIRST HALF OF 2016 AND COMPARED THEM WITH THOSE FOR THE SAME PERIOD IN 2015

The Istat data developed by Assocomaplast (the national trade association, including more than 160 manufacturers of plastics and rubber processing machinery, equipment and moulds) show imports at nearly 390 million euros, with a new peak (+9.7%) deriving from steady growth in April-June after a negative first quarter. This would seem to reaffirm the signs of recovery in the domestic market that had shown up on the radar last year.

The trend in exports this year, on the other hand, was much less impressive: excluding the data confined exclusively to the month of January, which were not particularly significant, the bottom of the trough was seen precisely last June at -2.3%, following months of foreign sales dropping by -0.5% to -1.0%. The result is a weakening in the positive trade balance, which did not reach one billion euros.

"Regarding the key geographical macro-areas for sales abroad - which are again the strong point for the sector - particular increases are seen in sales to the NAFTA countries," underscores Assocomaplast president, Alessandro Grassi. "This confirms the influence now assumed by this group on the balance of Italian foreign trade for the sector. Specifically, there is a strong increase in exports to Mexico, thanks to the combined effect of the favourable dynamics of the Mexican economy and the driving force of American businesses with operations in Mexico".

Asia is also a bright spot, thanks to increased sales in the Far East - China, India, South Korea and Vietnam - and, as regards the Middle East, to the much awaited recovery of sales in Iran.

Breaking things down by machinery/equipment type and limiting the analysis to the categories having the greatest weight on the total while ignoring the more heterogeneous ones, the biggest increase was seen in the importation of moulds, mainly from Germany. An increase was also observed for injection-moulding machines, which were primarily purchased, and in greater numbers than in the previous year, from Austrian and German manufacturers.

Germany, China and Austria, in that order, are once again the main suppliers of technology to Italian processors; while European suppliers have consolidated their positions with double-digit increases, China recorded a limited +2%.

As regards exports, some of the major technologies show positive trends:

- sales of flexographic printers show positive results (+19.4%) with major orders from the United States and increases to other important destinations;

Assocomaplast president, Alessandro Grassi

- sales of injection-moulding machines (+10.2%) have witnessed a boom in Mexico and a somewhat smaller one in the United States;
- extrusion machines (+1.9%) have shown a clear increase in sales to Mexico and to France.

ASSOCOMAPLAST SURVEY AMONGST MEMBERS AND PARTICIPATION AT K 2016

The Istat data are confirmed also by the recent Assocomaplast sentiment survey of a sample of processors, who report recovery in domestic and slowdown in foreign demand, and among its members, who show a trend toward stability in orders, especially from foreign markets, a situation that is expected to continue to the end of the current year.

In parallel, we observe that competing German manufacturers closed out the first half of 2016 with substantial stability in imports and exports, recording positive variations on the order of tenths of percent.

"In effect", continues Grassi, "for years various Italian and German manufacturers have been recording a slowdown in orders in the months leading up to K, the principal world event for the sector, taking place in Düsseldorf from October 19 to 26, 2016. Interested buyers probably prefer to get an idea of the new technologies exhibited at the fair before planning and committing to their investments".

It is worth noting that the Italian presence at the three-year German fair will be second only to that of the hosts, with some 400 exhibitors, over half of them manufacturers of machinery, equipment and moulds, many of whom are members of Assocomaplast. The association will be there with its own stand (A56, hall 16), which will distribute MacPlas magazine and information on the Italian plastics and rubber industry, and provide a catering service for guests and associates.

The Assocomaplast stand will also be an exhibition venue for works of art by the artist Lady Be, who creates portraits using small pieces of discarded plastic (see box below). The fair will also mark the official opening of the promotional campaign for the exhibition Plast 2018 (Milan, May 29 - June 1, 2018). ■

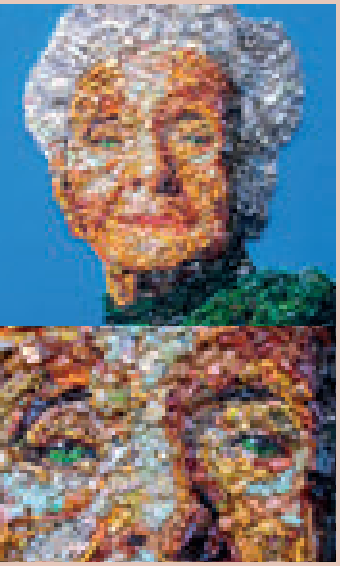
www.assocomaplast.org

Art and plastic materials at K 2016

Is it possible to create art entirely from pieces of plastic? Yes, you can!

Lady Be is an Italian pop artist famous for her "Contemporary Mosaics" which are not made from classic stone tesserae, but small pieces of toys, re-used items, cutlery, costume jewellery, stationery, bottle caps: anything and everything in plastic, a testament to the times we live in. While she is known in Italy and abroad for her portraits of celebrities and historic personalities, the artist also creates portraits of every-day individuals. "Sometimes, I am asked to create their portrait using their own personal re-cycled materials", explains Lady Be. "I believe it is a very special and original way of cherishing memories".

Another important work of art exhibited at K: Rita Levi Montalcini, plastic objects and resin on board (2016)



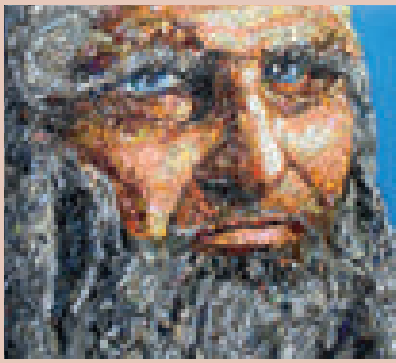
Detail showing the small pieces of plastic used in the Lady Be work

Small objects of various colours are used to create the face. The plastic pieces are chosen according to shape and colour, put together to create the form. The pieces used to create the portrait are never painted, not before or after the piece is completed. The choice of maintaining their original colour and shape serves to preserve the memory attached to them as well as ensuring they are recognisable after they are placed in the composition. "People react with a strong sense of astonishment to my work", says the artist. "When the work is viewed up close, all the detail can be recognised: it can be a sweet wrapper, a surprise found in a chocolate egg, a printed pen logo, or even items we use every day: sunglasses, cosmetics, key rings and so on. The initial reaction is one of disorientation as close up it is hard to identify the subject particularly on seeing larger sized works for the first time, but take a few steps back and the image becomes very clear. The public rejoices at recognising the face of an individual who is often will known to most people".

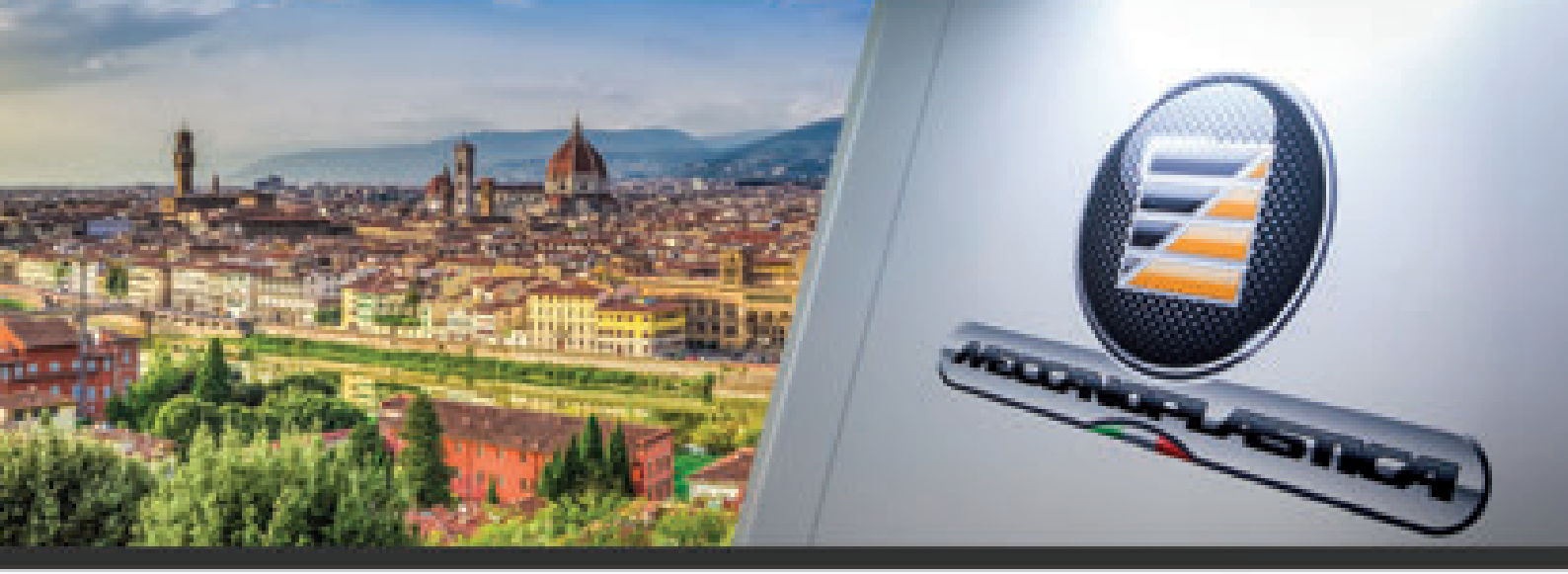
They are interesting works of art that are liked by many: experts, non-experts, old and young alike, the latter in particular like the use of small toys they recognise easily. Above all, these are works of art that reflect on all of us.

Plastic has become our daily material of choice, giving rise to the problem of its disposal. Lady Be recycles and, in using her own personal artistic style, tries to make us reflect on recycling and environmental sustainability. This is why Lady Be art is defined as pop art. The critic and art consultant Francesco Saverio Russo explains, "Popular objects are recycled, mainstream items we all know well, that we handled when we were young or that continue to be used today by parents, grandparents and people generally. (...) The works of Art by Lady Be are pop art as they depict idols and legends the masses identify with such as Marilyn Monroe, Audrey Hepburn, Pablo Picasso or Salvador Dali". Since 2010 Lady Be has displayed her work through art exhibitions across the world. Four of her works of art, representing Italy, will be exhibited at the Assocomaplast stand (A56, hall 16) at the K Trade Fair in Düsseldorf while Lady Be will be in Vienna, receiving the Klimt Prize for Artistic Merit. ■

www.ladybeart.com



One of the Lady Be works of art exhibited on the Assocomaplast stand at the K Trade Fair in Düsseldorf: "Leonardo Da Vinci", plastic objects and resin on board (2016)



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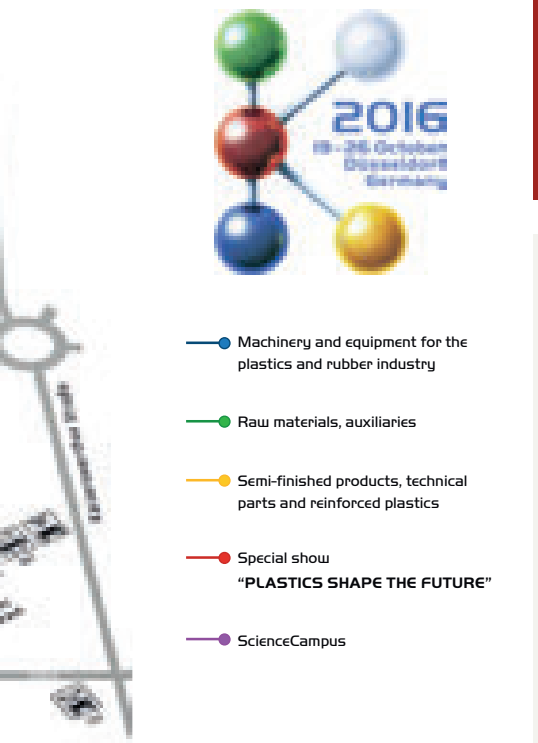

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- Semi-finished products, technical parts and reinforced plastics
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GRUNIVERPAL DI TRANCHERO J. & C.	11 / B74
GUIDOLIN GIROTTO	3 / C12
HELIOS ITALQUARTZ	**11 / E60**
HEROFLON	8B / H29
HRSFLOW (DIVISION OF INGLASS)	**1 / B08**
ICMA SAN GIORGIO	**16 / B05**
IECI	11 / B14
IES (INTERNATIONAL EXPANDING SHAFTS)	3 / F21
IHR	1 / B04
IMANPACK PACKAGING AND ECO SOLUTIONS	3 / G49
IMG	**15 / A57**
IMPIANTI OMS (OMS GROUP)	**13 / D11**
IMS DELTAMATIC	**3 / B73**
IMS DELTAMATIC - ROTOMAC	**3 / G43**
IMS DELTAMATIC - TURRA	**13 / C36**
INCOS STAMPI	1 / F10
INDUSTRIAL FRIGO	**10 / B41**
INGLASS	**1 / B08**
IPM	**16 / D58**
IRCA	**13 / A38**
IST (ITALIA SISTEMI TECNOLOGICI)	4 / A22-02
ISVE	10 / J16
ITALCOPPIE	11 / D52
ITALMATCH CHEMICALS	8B / F46
ITALTECHNOLOGY MOULDS	15 / A21
ITALWORK ROLLS	3 / E24
ITIB MACHINERY INTERNATIONAL	**15 / D37**
ITS (ITAL TRADE SERVICES)	11 / A71
ITW (INSTRON DIVISION)	**10 / J18**
KBA-FLEXOTECNICA	4 / B11
KOLZER	4 / A12
KOREMPLAST	7.2 / C14
KROMABATCH	7.1 / C48
LAEM SYSTEM	4 / A04
LAMFI EQUIPMENT	1 / A20
LANFRANCHI	14 / C17
LASERPIN	3 / A07
LAWER	13 / D13
LORANDI SILOS	10 / B58
MACA ENGINEERING	1 / F14
MACCHI	**17 / C20**
MAC DUE	13 / C24
MACOILER INTERNATIONAL	15 / A06
MACPLAS (TECHNICAL MAGAZINE FOR THE PLASTICS AND RUBBER INDUSTRY)	16 / A56
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MAGMA MACCHINE	13 / B78
MAICOPRESSE	**15 / A21**
MAIN TECH	11 / H22
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MARANGON DANILO & C.	1 / C11
MARTIGNONI ELETTROTECNICA	11 / C22
MARTINENGHI	4 / A57
MASS INTERNATIONAL	11 / D66
MAST	11 / B17
MASTERWATT	13 / B15
MATEX	**4 / E34**
MATEX VARESE	17 / C07
MB CONVEYORS	9 / C12
MC PLAST DI MELCHIORI LUCIANO & C.	16 / A79
MECA-TECNO DI CAGOSSI GIANNI & C.	**3 / A87**
MECCANOPLASTICA	**14 / B18**
MERO	10 / J62
MILANO LAME	12 / E05
MOBERT	**3 / E16**
MONDIALSTAMPI	1 / D11
MONTELLO	5 / D41
MORETTO	**11 / H57 - FG.11 / .1**
MOSS	**4 / B54**
MOVENGINEERING	9 / E65
MOVING	13 / A62
MP3	8A / D20
MVV	10 / A01
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NOVAMONT	6 / A58
NOVOTEX ITALIANA	5 / C20
NUOVA IDROPRESS	13 / D24
OFFICINA MECCANICA CARLASSARA	16 / D60
OFFICINA MECCANICA FBF	16 / D61
OFFICINE DRAG	2 / E06
OLMAS	**15 / A56**
OMA	3 / G89
OMG SPA	**11 / E41**
OMG SRL	3 / D06
OMIPA	**17 / A42**
OMISA	11 / E58
OMS DEI F.LLI MAINA	**2 / E07**
OMSO	**4 / B44**
OMV MACHINERY	4 / C56
ORP STAMPI	1 / C03
PASQUATO DI PASQUATO LORENZO E BAZZA PAOLO	3 / A53
PEBO	8B / C55
PERSICO	**15 / A38**
PIAZZA ROSA	2 / B14
PIOVAN	**9 / C59**
PLAMATIC	10 / C47
PLASMAPPS TRATTAMENTI SUPERFICIALI	10 / D15
PLASMEC	**9 / A60**
PLAST 2018 - MILAN, MAY 29 - JUNE 1, 2018	16 / A56
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PLASTIC METAL	15 / A23
PLASTIC SORT	10 / B31
PLASTIC SYSTEMS	**11 / H39**
PLASTICA ALFA	7.0 / A29
PLAXTECH	**15 / C05**
POLIVINIL ROTOMACHINERY	9 / C22
POVELATO	11 / D11
PRESMA	**15 / C57**
PREVEN MECCANICA	1 / C33
PREVIERO N.	**9 / D41**
PRODICON INTERNATIONAL	9 / E29
PROFILE DIES	**16 / E72**
PROMASS	13 / C37
PROMECO	9 / D56
PROMIXON	**10 / H02**
PROTEK	3 / G82
PU MIX TECHNOLOGIES	13 / B80
PUBLITARGET	4 / D03
QS GROUP	**3 / C51**
RADICIGROUP PERFORMANCE PLASTICS	6 / B10
RAMBALDI & CO. IT	13 / A44
RE CONTROLLI INDUSTRIALI	4 / D35
REAGENS	6 / D55
REG-MAC	**9 / D52**
REPI	6 / B24
RES	17 / A07
R.G.CHEM	8A / D39
RIALTI	7.1 / A05
RIDECO	7.1 / A05
RIPRESS	**15 / A03**
RITMO	11 / E40
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ROBOR	11 / E59
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ROMAGNANI STAMPI	2 / A23
ROSSI STAMP	2 / A15
ROSSINI	4 / B52
ROTO MOULDS	13 / B05
RP INJECTION	13 / C77
RTECH ENGINEERING	12 / A07
SABO	6 / B07
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SALDOFLEX	**3 / F54**
SARA	14 / B23
SASPOL TECHNOLOGY	13 / A84
SCAE EUROPE	**3 / B55**
SCM GROUP	3 / B16
SCS (SOCIETÀ COSTRUZIONE STAMPI)	1 / A05
SEEONE VISION TECHNOLOGY	17 / A07
SER	8A / H10
SETTIMA MECCANICA	14 / C50
SGS ITALIA	**3 / G90**
SICA	**16 / A22**
SILIKONEUROPE	8B / D49
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SIMATEC	11 / G41
SIMEC GROUP	4 / E19
SIMEX	2 / F08
SIMO	17 / C78
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SITRA	7.0 / A11
SMI	14 / B69
SOFTER	6 / A20
SOLVAY	6 / C61
SONIC ITALIA	11 / C72
SOREMA (DIVISION OF PREVIERO N.)	**9 / D55**
SOTEMAPACK	11 / B76
SOVERE	6 / A20
SPECCHIDEA	6 / E55
ST SOFFIAGGIO TECNICA	**14 / B04**
STAR AUTOMATION EUROPE	**11 / G74**
STEBO	11 / H08
STOCCHIERO	13 / A01
SYNCRO	**10 / A74-2**
T2	**3 / G60**
TABO DI TABACCHI ONESTO	17 / A07
TAPEMATIC	4 / A40
TEC MAC	13 / A90
TECHMILL	3 / E40
TECHNO PLASTIC	**12 / A24**
TECMES	10 / H37
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TECNO MATIC	12 / B34
TECNO SYSTEM	15 / C62
TECNODINAMICA	**13 / C13**
TECNOELASTOMERI	5 / A05
TECNOFER ECOIMPIANTI	9 / C76
TECNOFIVE	3 / F29
TECNOMAGNETE	11 / A59
TECNOMATIC	**16 / D05**
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TECOM	**16 / D71**
TEKNOMAST	**17 / C78**
TEMAC	3 / G12
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TEXER DESIGN	1 / B09
TGS STAMPI	2 / E09
THERMOPLAY	**1 / F03**
TOVO GOMMA	7.0 / B27
TOYO EUROPE	13 / C77
TPV COMPOUND	8A / K20
TRANSFER GOMMA	8B / D49
TRIA	**9 / E05**
UCISAP (ITALIAN ASSOCIATION OF MOULDS, DIES AND PRECISION TOOLING MANUFACTURERS)	2 / A23
UNIFORM	2 / A23
UNILOY MILACRON	**15 / C06**
UNION OFFICINE MECCANICHE	**16 / B60**
UTECO CONVERTING	4 / B30
UTPVISION	11 / A70
VALTORTA (BATTAGGION GROUP)	9 / D05
VAMP-TECH	7.1 / D47
VEGA	2 / B15
VERSALIS	6 / A44
VIARA	3 / F68
VILLANI GIOVANNI	13 / A79
VIPLAS	11 / C57
VISMEC	11 / F28
WCS	2 / B14
WINTAL MACHINES	10 / G79
WINTECH	13 / A54
ZAMEC	17 / A19
ZANELLI	10 / H16
ZOCCHI GIOVANNI	17 / A15
ZRE	10 / G47

FROM JANUARY TO MID-JULY 2016

MORE VOLATILITY IN THE EUROPEAN POLYOLEFINS MARKET

PRICE TRENDS OF POLYOLEFINS IN THE FIRST SEVEN MONTHS OF 2016, COMPARED WITH THE SAME PERIOD OF 2015, ACCORDING TO THE CONSULTING COMPANY CHEMORBIS

BY **EZIO FILIPPI**

The European polyolefins market has been prone to more volatility so far this year when compared to the same period of 2015. Looking back at last year, both PE and PP prices were seen registering gradual increases during the first half of the year prior to a moderate decreasing trend (see **figures 1 and 2**).

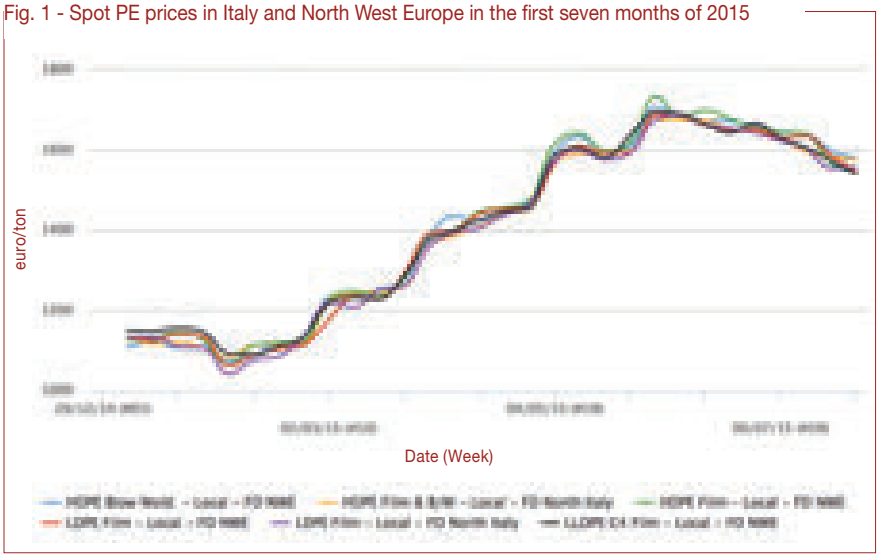
This year however, shifts in trend were more frequent, which caused uncertainty among market players (see **figures 3 and 4**). This situation can be attributed to fluctuating crude oil prices in addition to changing supply and demand dynamics, according to the consulting company ChemOrbis.

INCREASING IMPORTS FOR POLYETHYLENE

The European polyolefins markets started the year of 2016 on a weak note, weighed down by the lower monomer settlements for January. Spot naphtha prices drew near 280 dollar/ton on a CIF NWE basis during the month due to pressure from plunging crude and kept the sentiment bearish. Prices extended their downward trend into February due to the ongoing pressure from the cost side in contrast with the firm sentiment across other global markets. Spot PP prices hit as low as 950 euro/ton for homo-PP injection and 1000 euro/ton for PP block copolymer injection across the region. Stabilization came as of March and rollovers to modest increases passed on both PP and PE deals. Firmer crude oil prices pushed up olefins prices across the globe. However, European monomers' response to higher energy costs was more limited with respect to Asia. Still, supply was tight particularly for LDPE and HDPE film due to a number of ongoing outages in Europe, which lent support to the PE market.

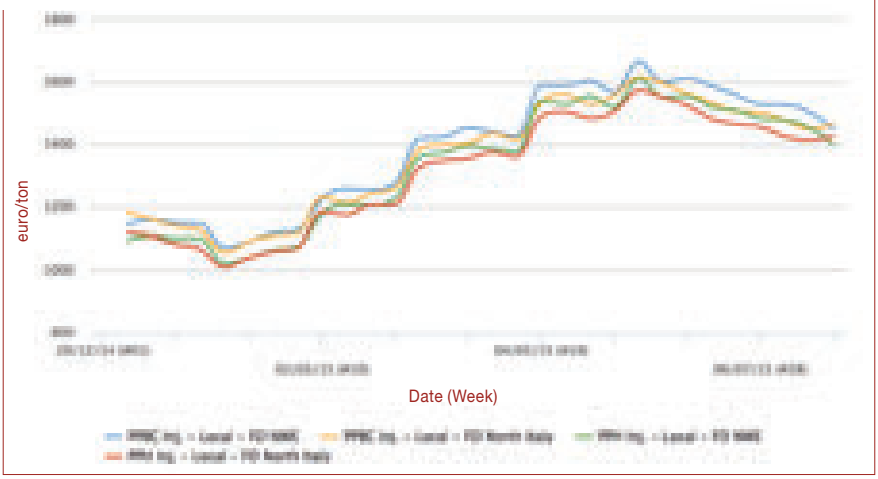
Versalis declared force majeure on LDPE from Ragusa, Italy after a fire broke out in the first half of January. The force majeure was still in place as of the first week of July.

Fig. 1 - Spot PE prices in Italy and North West Europe in the first seven months of 2015



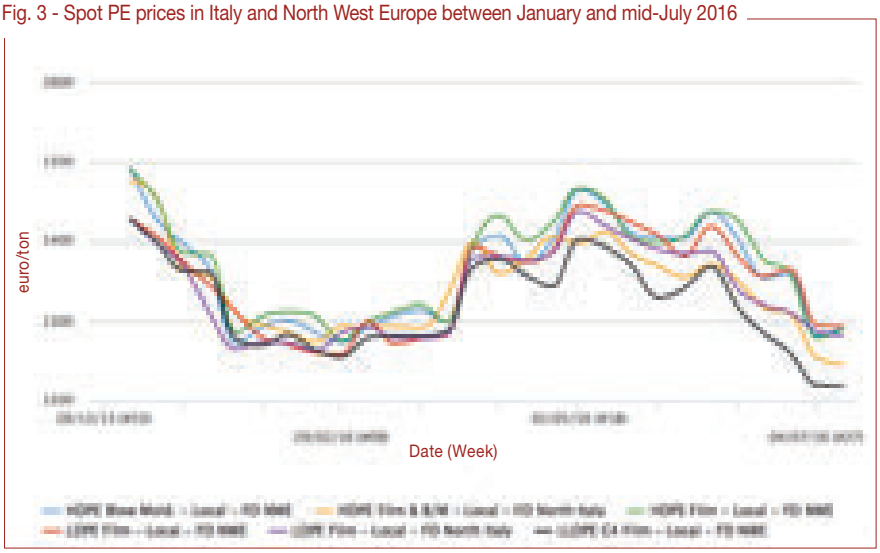
Source: ChemOrbis Price Wizard (www.chemorbis.com)

Fig. 2 - Spot PP prices in Italy and North West Europe between January and July 2015



Source: ChemOrbis Price Wizard (www.chemorbis.com)

Fig. 3 - Spot PE prices in Italy and North West Europe between January and mid-July 2016



Source: ChemOrbis Price Wizard (www.chemorbis.com)

LyondellBasell's 350,000 ton/year LDPE unit at Aubette (France) was offline since late February, with its restart being slated for the first half of May. Unitpetrol shut its Litvinov site in Czech Republic for a planned maintenance from mid-March until late April. The site houses a 320,000 ton/year HDPE plant as well as a 275,000 ton/year PP unit.

Indeed, PE imports in the European Union increased notably in the first quarter of 2016 with respect to the full year average of 2015 and the largest gain was registered in HDPE shipments, according to data from ChemOrbis Stats Wizard (see **figure 5**).

STILL MANY PRODUCTION STOPS BY FORCE MAJEURE

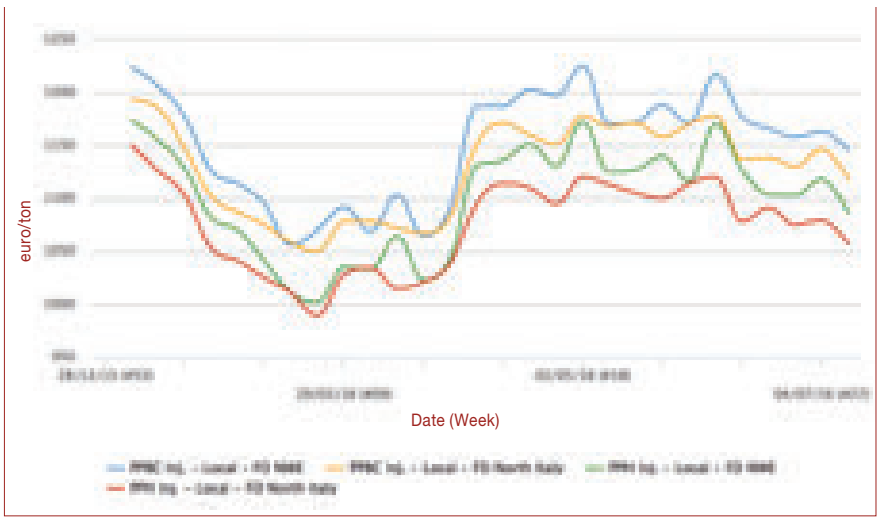
After both ethylene and propylene contracts settled up 60 euro/ton for April, the upward trend gained momentum and sellers approached the market with increases larger than the monomer hike for their PP and PE prices, citing supply constraints. Local prices below the 1000 euro/ton threshold for homo-PP injection disappeared in West Europe and spot PE prices below 1300 euro/ton also vanished. Limited availability and strong demand continued to give the upper hand to sellers throughout the month. Total declared a week-long force majeure on HDPE and PP from Feluy (Belgium), due to a trucker strike in the region.

PP prices continued to track an upward trend in May albeit at a slower pace with respect to April in line with the modest gain of 15 euro/ton in propylene contracts. The PP market wasn't considered to be as firm as PE, for which increases of up to 60 euro/ton were reported at the beginning of the month. However, the dynamics changed in the second half of May as the polyolefins market was stuck between slower demand and firm costs.

Total declared force majeure on supply from all its polymer sites in France due to nation-wide strikes. Following Total, Ineos also announced a force majeure on HDPE and PP from Lavera, France. These supply issues caused concerns among players, who confirmed experiencing delays in their deliveries back then. However, it didn't exert a strong upward pressure on the polyolefins market given slower trading activities with respect to April. Many PP sellers stepped back from their initial prices, wrapping up their May business with rollovers to small increases. The PE market, on their other hand, came under downward pressure from incoming imports for different origins, including Saudi Arabian, Turkish, Brazilian and Southeast Asian. As a result, spot LDPE and LLDPE prices slipped in Italy prior to June and competitive spot Qatari and Egyptian offers brought down local LLDPE and HDPE prices in West Europe.

Ethylene and propylene contracts for June were agreed with increases of 25 euro/ton and 17.5 euro/ton, respectively. The PP market followed a trend similar to May as prices surfaced on a stable to slightly firmer note. Adding to the supply disruptions from Ineos and Total, Lyondellbasell also declared force majeure on PP from Tarragona (Spain) and Brindisi (Italy) in the second week of June. However, no concerns were reported regarding PP availability as supply was considered

Fig. 4 - Spot PP prices in Italy and North West Europe from January to mid-July 2016



Source: ChemOrbis Price Wizard (www.chemorbis.com)

to be in balance with demand. The sentiment shifted across the polyolefins market once again in the second half of the month contrary to the firming trend in other global markets. European producers' initial hike attempts for PE weren't followed in the distribution channel due to a lack of support from demand. Incoming imports weighed down the PE market and sellers issued decreases towards the end of the month to boost their sales amidst thin buying interest stemming from the bearish July outlook.

PP AND PE PRICES HIT THE MINIMUM

Looking at July, both ethylene and propylene contracts were agreed with increases of 10 euro/ton and 17.5 euro/ton, respectively. However, the modest gains in monomer contracts failed to boost the sentiment in the polyolefins market, which was weighed down by the prevailing weakness in demand. For PP, initial prices were reported with rollovers to small decreases. However, more sellers elected to cut their prices by the middle of the month as the market remained under pressure from comfortable supply amidst poor demand. The emergence of competitive locally-held Middle Eastern origins brought the low end of the homo-PP injection range to 1000 euro/ton on an FD basis in Italy and similar prices were also reported in West Europe on a cash basis. However, buyers maintained their cautious stance in anticipation of finding offers below 1000 euro/ton for homo-PP later in the month. The downward momentum was still more notable in the PE market, where larger reductions were witnessed with respect to PP in the first half of July. Demand was stagnant while supply was comfortable, especially for LLDPE. Spot prices broke below the 1200 euro/ton threshold for LLDPE after competitive locally-held non-European offers surfaced, including US material. ■

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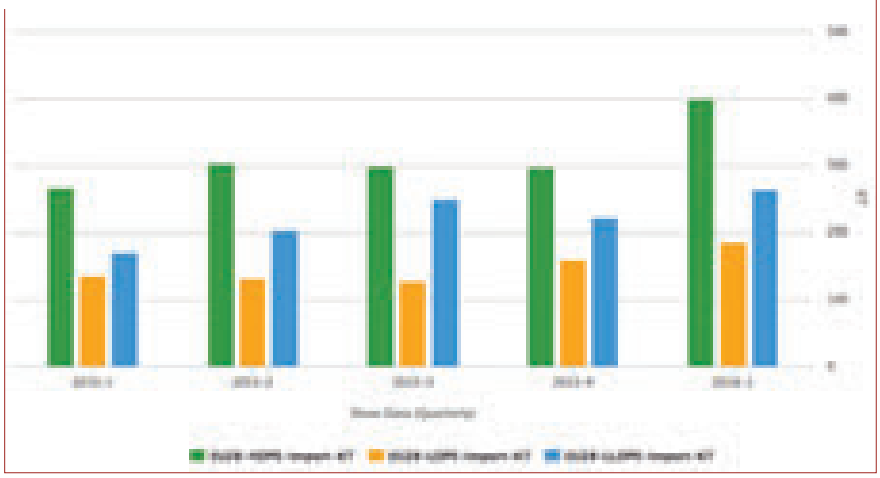
Fig. 5 - Imports of PE between early 2015 and Q1 2016 at 28 EU member states



Source: ChemOrbis Stats Wizard (www.chemorbis.com)

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NEWS

Multiclient study from Plastic Consult

The Italian plastics industry stands up again

The Italian consulting company Plastic Consult, operating in the field of industry, finance, trade associations and public authorities, has published the 2015 edition of Plastic Trend Synthesis, a multiclient study which summarizes the figures and data resulting from the company's long standing contacts with the plastics industry. It analyses the current trends in the supply of and demand for all major thermoplastic polymers.

The main fact emerging from the new study is that the Italian demand for thermoplastic polymers showed a major increase in 2015, way above expectations, with a strong acceleration in the last quarter of the year. The overall demand for virgin polymers exceeded 5.5 million tons for the first time since 2012, an increase superior to three per cent points with respect to the previous year (see **figure 1**).

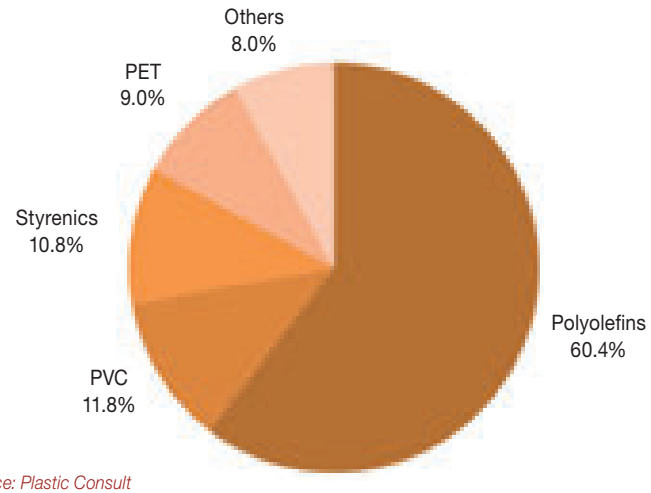
The short-term prospects are favourable, despite the Italian economy still shows a certain weakness. It is expected that investments in construction and infrastructure will be back to positive during 2016, but the impact on the plastics sector will be rather slow. Industrial production, and especially final consumption, is showing a healthy recovery and domestic demand is the key factor for consolidating this growth.

In terms of consumption, most polymers showed more than satisfying figures compared to 2014, with polyolefins enjoying an above-average increase and PP rising strongly (+4%). Substantially stable figures for PVC, EPS and compact PS (the latter stopping the decline that started in 2007), while engineering polymers grew at a far superior rate (over +8%) keeping the same pace as in 2014, driven by the strong recovery of the Italian domestic production of automobiles.

Thanks to the excellent results recorded by the automotive industry (+30%) the market shares of major applications moved slightly in 2015 (see **figure 2**). The transport sector grew by 1% while the packaging industry fell below the historic 50% threshold, the building sector showed a 10% drop while the market shares of furniture, home appliances and agriculture remained unchanged. ■

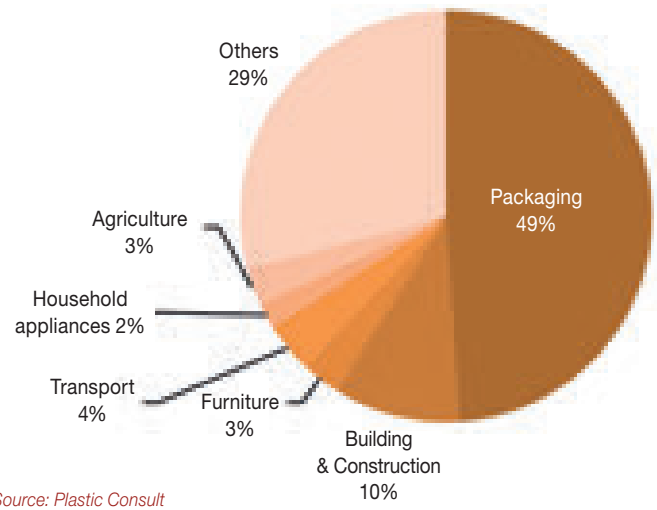
www.plasticconsult.it

Fig. 1 – Virgin polymers demand in Italy, 2015 (total: 5,5 million tons)



Source: Plastic Consult

Fig. 2 – Italian Plastics market by main applications (2015)



Source: Plastic Consult

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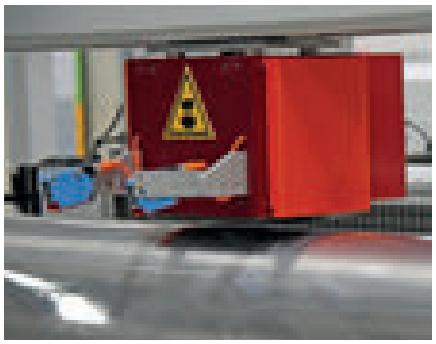

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NEWS

Plastic foams

US demand is forecast to rise 2.3 percent annually

According to the study "Plastic Foams" published by The Freedonia Group, a Cleveland-based industry research firm, US demand for plastic foams is forecast to rise 2.3% annually to 3,99 million tons (8.8 billion pounds) in 2020, valued at 25.2 billion dollars. Growth will decelerate from the rate posted during the 2010-2015 period. The construction sector is anticipated to lead growth prospects, which will see additional opportunities for foam insulation products bolstered by increasing construction activity. In the motor vehicle market, advances will slow in tandem with slowing motor vehicle production and by trends favouring smaller, more fuel efficient automobiles that require less foam on a per vehicle basis.

Packaging will remain the leading outlet for plastic foams through 2020, accounting for nearly one-third of total volume. This sector tends to be less cyclical than other industries due to the significance of nondurable goods such as food, and will see steady but below average gains through the forecast period. Advances will be constrained by ongoing environmental concerns regarding the disposal of packaging foams, which have resulted in the establishment of bans against foam foodservice containers in many localities. Nevertheless, demand will continue to be supported by the cost and performance advantages of plastic foams over alternative materials, and by opportunities for foam used to protect delicate items - including temperature sensitive pharmaceutical and medical products - during transport. Moreover, efforts to promote sustainability will generate greater interest in biodegradable packaging foams.

Polyurethane represents the leading resin in the plastic foams market. Rigid polyurethane foam will remain the dominant product type in this segment. Demand gains through 2020 will be based on growth in construction activity and by changes in building codes and construction practices that call for structures to use energy more efficiently. Flexible polyurethane foam will remain in high demand through 2020 based on healthy growth in the bedding and carpet underlay markets.

Polystyrene accounted for over one-third of demand for plastic foam in 2015 and will maintain a sizable share of the market. However, advances in the large packaging sector will be restrained by ongoing solid waste disposal concerns regarding the use of disposable foam products and rising competition from paper-based materials, which are viewed as more eco-friendly. Through 2020, expanded polystyrene foam is projected to see more rapid gains than its extruded counterpart, stemming primarily from its use in insulation, moulded foam protective packaging, and insulated shipping containers. Expanded polystyrene geofoam is predicted to exhibit especially rapid growth, albeit from a relatively small base.

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Flexible packaging market in 2015

A slightly growth in Europe

Gumlink Confectionery Company

Continuing moderate but steady growth in Germany and the UK, and a return to growth in Italy, France and Spain, are the main factors behind Europe's flexible packaging market growing by nearly 1.9% in 2015, up from 1.4% in 2014. In volume (area) terms, growth, at just over 2%, exceeded value due to the increasing substitution of cheaper materials and also some further down gauging.

These are two of the main conclusions from PCI Wood Mackenzie's latest annual report on the 13.5 billion euro European converted flexible packaging market, with growth expected to be broadly maintained at this level in 2016. Report author Paul Gaster also notes: "The small uptake in demand also reflects tentative recovery in the eurozone economy following the introduction of the policy of quantitative easing".

As in previous years, there were some significant regional and national variations in value and volume demand trends. Growth in Western Europe picked up last year as demand in Germany, the UK and Benelux continued to grow, albeit modestly. Sales growth in Turkey was maintained at around 3%, while the French, Italian and Spanish markets returned to growth, following static or declining demand in earlier years. The Italian market in particular had a successful year, with demand increasing by 3%, its best performance for many years.

The Russian flexible packaging market did relatively better that might have been expected. While the country's economy contracted by nearly 4% in 2015, flexible packaging demand continued to grow, albeit at less than 2% during the year. Of all the major European markets, Poland continued, yet again, to grow most strongly, while demand stabilised in Ukraine following previous large declines. A significant trend is the growing importance of East European exports of flexible packaging to Western Europe.

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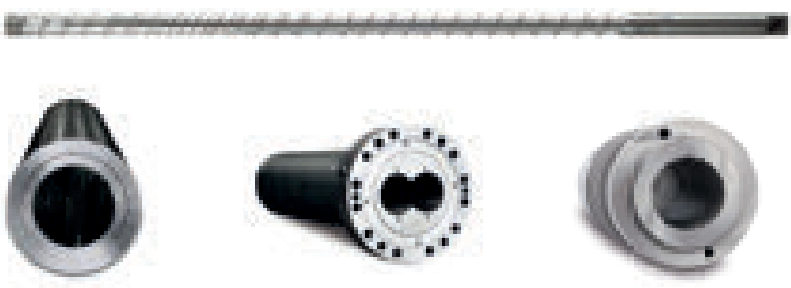

VIPLAS

PLASTICIZING SCREWS AND BARRELS

NEWS

Report from Smithers Pira

Consumer engagement trend drives innovation in smart packaging

Smithers Pira published a report which provides an in-depth, long-term assessment of the rapidly evolving market for smart packaging that includes both active and intelligent packaging technologies. The global smart packaging market value is forecast to grow during the five-year period to 2021 at an annual rate of 7.5% to 7.6 billion dollars (6.9 billion euros).

Active packaging is an extension of the protection function of a package and is commonly used to protect against oxygen and moisture. Intelligent packaging is an addition of the communication function of traditional packaging, and communicates information to the consumer based on its ability to sense, detect, or record external or internal changes in the product's environment and information about the status of the product and other information useful to supply chain managers or consumers.

University of Bath

The global active packaging market value is forecast to grow during the five-year period to 2021 at an annual rate of 4.9% to 5.6 billion dollars, while intelligent packaging is forecast to grow 18% per annum to almost 2 billion dollars. Intelligent packaging is the dynamic and potentially high-growth market with developments in printed electronics, cloud computing and the internet of things driving the adoption of intelligent packaging technologies. Whereas active packaging is a relatively mature market in comparison, although there are good growth opportunities for several technologies in niche markets.

The growing consumer concern regarding food waste and food safety is being met by both active and intelligent components. Active technology can now routinely double the effective shelf life of many perishable products, while intelligent packs offer clear signals about the condition of the product, removing the need for arbitrary "best before" labels.

Smithers' research shows that brand owners now want usable products, not just a technology or component, that adds real value to their brand, rather than short-term marketing gimmicks. They also want to see active and intelligent packaging developers working together, and also collaborating with design houses and packaging manufacturers, to provide total finished solutions.

www.smitherspira.com

Global market for synthetic rubbers

Rubber makes the difference


Michelin crossclimate

Making cuts into the bark of rubber trees would not get us far anymore: by now, traffic runs above all on synthetic rubber. The automotive industry is by far the main customer for elastically deformable plastics. This is one conclusion of the report of the market research company Ceresana which analyzes for the second time the global market for: styrene butadiene rubber (E-SBR and S-SBR), polybutadiene rubber (BR), ethylene propylene diene rubber (EPDM), butyl rubber (IIR), acrylonitrile butadiene rubber (NBR), as well as polychloroprene rubber (CR) and polyisoprene rubber (IR).

Per year, more than 12.6 million tons of these types of rubbers are consumed worldwide. More than one half of global demand is generated in the region Asia-Pacific. Due to above-average growth rates, the market share in this region will presumably rise to approximately 56% in 2022. The study deals with data for the years starting in 2006 and forecasts data until 2022.

The most important sales market in 2014 was the segment tires: almost 60% of total worldwide demand was generated by original equipment tires and replacement tires. Additionally, rubbers are used in various other products in the automotive industry. Among these are hoses, cables, gaskets as well as profiles for windows and doors. For this segment Ceresana forecasts an increase of global demand by 2.4% per annum (p.a.) until 2022.

The second largest application area for rubbers is the manufacturing of technical products such as conveyor belts, roll coverings, hoses, profiles, gaskets, cables, moldings, and roofing films. Furthermore, for the period 2014-2022, the company expects global demand for rubber in the segment industry and construction to increase by 2.9% p.a.

By far the most important type of products is SBR: more than 5.3 million tons were processed in 2014. SBR is produced by emulsion polymerization (E-SBR) or solution polymerization (S-SBR). While E-SBR accounts for 73% of total SBR demand, the market for S-SBR develops at significantly more dynamic growth rates of more than 5% p.a. The tire industry is the dominating sales market for these two products as well as for BR, IIR, and IR. The picture discernible in regard to EPDM, CR, and NBR is different: these are mainly used in industry and construction products as well as in modification of materials. **www.ceresana.com**

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PLENTY OF POTENTIAL FOR RECYCLING

TECHNOLOGICALLY, PLASTICS RECYCLING IS NOT A PROBLEM AT ALL TODAY. IN-HOUSE RECYCLING HAS NOW BECOME ESTABLISHED RIGHT ACROSS INDUSTRY. FOR PLASTICS PROCESSORS WHO WORK WITH PURE-GRADE RAW MATERIALS, THE WASTE-FREE FACTORY HAS BECOME COMMONPLACE. AND FOR POST-CONSUMER WASTES, THERE ARE INCREASINGLY MATURE REUTILISATION STRATEGIES, ENABLING THE REGRANULATE PRODUCED WITH THEM TO SUBSTITUTE VIRGIN MATERIAL WITHOUT PROBLEM. IN THE LAST FEW YEARS PARTICULARLY, THERE HAS BEEN FAST-GROWING DEMAND FOR RECOMPOUNDS, PIGMENTED AND/OR REINFORCED GRANULATES PRODUCED ENTIRELY FROM RESIDUES

According to PlasticsEurope - the association of plastics producers - the 1.45 million employees in the European plastics industry in 2014 were working for 62,000 mainly small and medium-size companies that generated total sales of 350 billion euros. Plastics consumption in the European industry as a whole came to 47.8 million tons, with about half, amounting to 25.8 million tons, being collected after use. PlasticsEurope investigated the collection rates in the 28 EU states plus Norway and Switzerland and found that there is still strong variation.

Although a ban on the landfilling of plastics residuals has meanwhile been announced in nine countries - Austria, Belgium, Denmark, Germany, Luxemburg, the Netherlands, Norway, Sweden and Switzerland - the proportion going to landfill in the other countries is still very high at as much as 70 per cent. The countries with the highest landfill shares are Bulgaria, Croatia, Cyprus, Greece and Malta. What is compared here is the share of plastics residuals landfilled as against the residuals that are reutilised, i.e. incinerated for their energy content or recycled. Overall, of the total collected residuals in Europe, about two thirds are now reutilised, while 30.8 per cent are landfilled. Of the plastics residuals that are reutilised, about half - 7.7 million tons - is recycled and the rest is incinerated to generate energy.

Roughly 125,000 tons of PVC wastes, including window profiles, are recycled each year in Europe. The regenerated material can be used without difficulty for the production of articles for the construction sector such as profiles and pipes. Image: Rewindo

The goal must be to significantly reduce the quantity of landfilled plastics in the coming years and to reutilise more. PlasticsEurope likens the quantity of some 8 million tons of plastics that are currently still landfilled Europe-wide to a volume of 800 Eiffel Towers. Experts are therefore demanding more concrete political targets in all European countries, educating consumers better to adopt a more sustainable attitude towards plastics as a resource, and the introduction of improved, nationwide collection and sorting systems.

For many products, such as bin liners, it has already become commonplace today to use recyclate. This makes good economic and ecological sense. Image: Polifilm

THE MAIN FRACTIONS ARE POLYOLEFINS

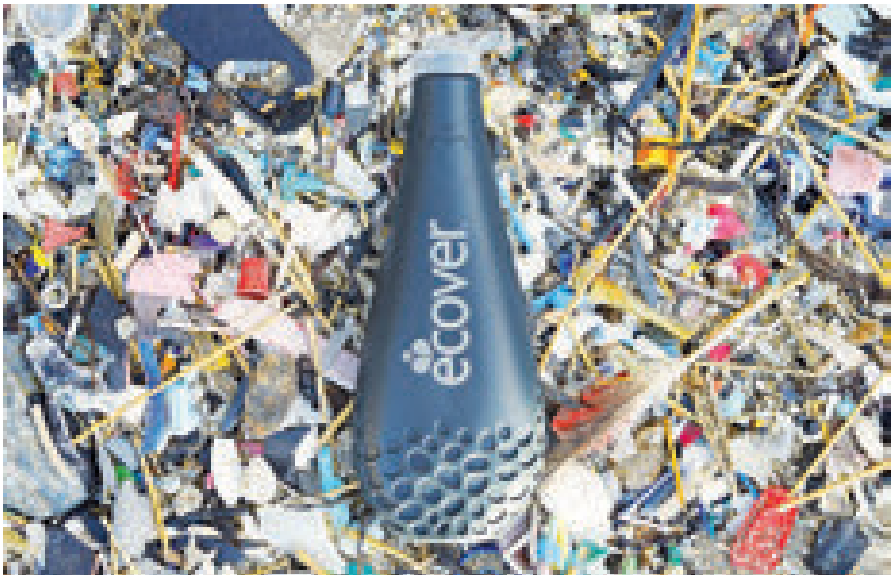
With about 9.5 million tons of PP, 8 million tons of LDPE and LLDPE and 6 million tons of HDPE and MDPE, polyolefins are by quantity the plastics most used in Europe, collectively accounting for about half of overall consumption. Because of their quantity and many fields of application, polyolefins account for the lion's share in the recycling streams as well. If these are pure-grade residues, they can be efficiently processed, so there are numerous recycling businesses devoted to polyolefin recycling. Some plastics processors are even going a step further and, in addition to in-house recovery and the direct recycling of their production wastes, operate their own regranulators to produce granulate from their wastes. One such firm is Polifilm Extrusion in Weissandt-Gölzau (Germany) which generates 25,000 tons of regranulate per year, enabling it to produce bin liners and construction and agricultural sheeting more profitably. The situation is more complicated when PE and PP are mixed, as they are very hard to separate because of their similar density, and NIR sorting processes are today state of the art. However, PE and PP can also be processed together into high-grade products, as mtm plastics (Niedergebra, Germany) demonstrates with its PE/PP regranulate. DSD Resource in Cologne specialises in the processing of the pure PP fraction. "We rely on a defined, reproducible starting blend so that we can produce defined, reproducible regranulate in attractive colours", explains managing director Michael Heyde.

PET RECYCLING ESTABLISHED BUT WITH ROOM FOR EXPANSION

Polyethylene terephtalate (PET), most of which is used for the production of bottles, accounts for almost 7 per cent of total plastics consumption per year in Europe or about 3.1 million tons. Overall, the 30 countries of Europe achieve an average collection rate of 57 per cent. In 2014, for example, 1.75 million tons of post-consumer PET wastes were collected. Here, again, the collection rates vary greatly. While Germany, Italy and Switzerland collect about half of the total volume, some countries achieve a collection rate of only 10 to 20 per cent. The PET sector is enjoying rising collection rates overall, which, according to the consulting company PCI PET Packaging, Resins & Recycling, should increase by a further 3 to 5 per cent per year by 2019. However, it is almost exclusively bottles that are collected, usually in dedicated collection schemes. Although it was originally the goal to return the collected bottle flakes to bottle production, the industry has sought and found customers in other areas. For film/sheet manufacturers, post-consumer bottle flakes have become increasingly interesting, and in 2014 they used the biggest share - 34 per cent - of the collected residuals in their branch of industry. Almost 30 per cent of the flakes were used in blow moulding applications, 26 per cent in the fibre industry and the rest for packing straps and other products.

"Production of the regranulate required in injection moulding applications for the production of new bottles for food or non-food contact is currently low because of the sharp drop in the price of virgin material", explains Elfriede Hell, head of Recycling Technology at Austrian plant manufacturer Starlinger. "Unlike used bottles, post-consumer trays and films usually end up being incinerated for energy or even on landfills. "But things have recently been changing. We have a number of customers interested specifically in projects for recycling trays and films", Hell stresses, convinced that the strong demand for PET

Injection mouldings producer Gies Kunststoffwerk in Niederaula (Germany) produces coloured shopping baskets using nothing but PP regranulate from the company DSD Resource in Cologne. Image: DSD



For the extrusion blow-moulded dishwashing detergent bottle made of polyethylene, Ecover Belgium, manufacturer of ecological cleaning agents, uses plastic wastes gathered by fisherman from the sea. Image: Ecover

packages will continue as their glossy and stylish appearance meets the needs of consumers and marketers perfectly.

Werner & Mertz in Germany has become the first company to recycle non-deposit PET bottles and films/sheet from collected packaging waste. As part of its recycling drive, the company has produced regranulate for use in detergent bottles out of PET wastes. However, here again they are only able to process a small proportion of the films/sheet.

PVC RECYCLING ACHIEVES HIGH UTILISATION RATES

The recycling of PVC - a material whose outstanding mechanical properties have made it indispensable, particularly in the building sector, where it has a 70 per cent share, but also in the packaging, furniture and medical technology segments - has developed very encouragingly in the last few years. According to a Consultic study commissioned by PlasticsEurope, the demand for PVC in Europe came to 4.9 million tons in 2014, making it the third most used plastic after PP and PE. Germany accounts for 1.56 million tons of this, or roughly a third of total demand.

Since PVC is often employed in very durable products like windows, pipes and floorcoverings, "only" 650,000 tons are available for reutilisation each year, with about 520,000 tons of this coming from post-consumer applications and 130,000 tons being industrial wastes. The reutilisation rate for PVC wastes is 99 per cent, with only 1 per cent being disposed of. Of the 99 per cent that is reutilised, 62 per cent, i.e. 396,000 tons, is used for energy recovery and the rest is recycled. The recycled PVC generated in this way is put to use particularly in building applications, e.g. in new profiles and pipes, as well as in horticulture and agriculture. "Our sector has been concerned with the recycling of PVC for over 25 years, so we already have a very well developed network today", says Thomas Hülsmann, managing director of Arbeitsgemeinschaft PVC und Umwelt, Bonn. "Just how important recycling is for the sector is expressed by the European voluntary commitment that is supported by the leading plastics associations. In the most recent voluntary commitment "VinylPlus", the companies of the sector undertake to reutilise 800,000 tons of wastes for recycling and energy recovery by 2020. This demonstrates the forward-looking and sustainable position adopted by the sector", Hülsmann adds.

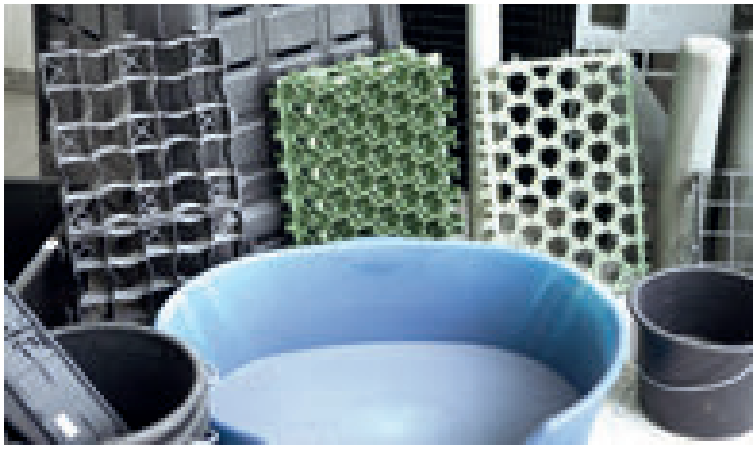
COMPOSITES ARE OFTEN UNSUITABLE FOR RECYCLING

While post-consumer products made of pure polymers lend themselves well to reprocessing, the situation for composite products consisting of two or more raw materials is entirely different. These wastes are in most cases unsuitable for recycling. Michael Scriba, mtm-plastics managing director and member of Plastics Recyclers Europe (PRE) and of Bundesverband Sekundärrohstoffe und Entsorgung (bvse, Federation for secondary resources and disposal), is therefore calling for the recycling-friendly design of the packages that contribute a large proportion of post-consumer wastes. With the aid of the RecyClass programme, any manufacturer of plastics packages can quickly and easily check whether his package is recycling-friendly. Here it is particularly important to dispense with fillers like chalk in PE and PP packages as far as possible, avoid plastics-paper composites, use pigmentation in moderation and make sure that the density of all products is well clear of 1 g/cm³ so that separation on the basis of density is possible.

At the same time, efforts are being made in the industry to develop reutilisation strategies for mixed wastes. For example, the German company Trenntechnik Ulm is pursuing a very exciting approach here in developing a chemical separation process for PE/PA composite films and building a unique production plant with a capacity of 10 tons per day (see picture at the beginning of this article). The end products of the separation process are a polyamide comparable with virgin material and a polyethylene that is pigmented directly with soot, i.e. a carbon black master batch in a particularly pure form. As stressed by managing director Wolfgang Zacherle, there is a suitable solvent and separation agent for every plastics composite, so there are no obstacles to an extension of this process to other composite products.


Herbold Meckesheim

SUMMARY
Although recycling is a much-discussed topic today and is also very much alive in many projects in the plastics industry, experts are repeatedly confirming that, by comparison with other sectors, too little waste material is used instead of virgin material. Across Europe, 50 per cent of metal scrap is returned to the steelmaking process, and the same applies to the paper industry, where 50 per cent of old paper and board is used in the production of new paper and board. For glass, at 33 per cent, the figure is a little lower, but still very high compared to the quantities that are recycled in the plastics sector. For in the plastics sector, only about 4 per cent of reprocessed waste plastics are used instead of virgin material in the fabrication of plastics products. The plastics sector is of course a young industry overall. Plastics only became widespread in the 1950s, and reutilisation strategies for waste plastics were only introduced in 1990s, yet both the collection systems and technical feasibility have developed enormously in the intervening period. Anyone wishing to find out about these new technical solutions can do so at K 2016, the world's number one trade fair for the plastics and rubber industry, held in Düsseldorf from October 19 to 26. Numerous exhibitors are presenting machines and plant for processing and recycling, for pure-grade wastes as well as for mixed wastes and wastes of rubber.
It can therefore be assumed that recycling rates will continue to rise in the years to come, as there is strong demand for recyclate for both environmental and economic reasons. Marine litter, i.e. the pollution of the seas with wastes, has internationally highlighted the irresponsible treatment of wastes particularly in newly industrialised countries and lent added strength to the demands of other consumers for the sustainable treatment of resources.



Many different products can be produced with ease from regranulated polyolefins, mostly by injection moulding. Image: mtm plastics

Model projects like the Ocean Bottle are not only very interesting examples, but also help to raise awareness of the subject among the general public and, above all, consumers. For the production of this Ocean Bottle, Ecover Belgium enlisted the services of fishermen in Britain, France and Belgium to collect bottles from the sea. Ten tons of waste was accumulated within a year, and the PE fraction from this was recycled into new PE dishwashing detergent bottles. ■

www.k-online.com

EUROPEAN PROJECTS - LEGUVAL AND HIPERDRY

RESEARCH GOES ON!

PARTNERS FROM DIFFERENT EUROPEAN COUNTRIES WORK TOGETHER TO DEVELOP NEW SUSTAINABLE PROCESSES FOR THE PRODUCTION OF CHEMICAL COMPOUNDS FROM RENEWABLE RESOURCES AND FOR A NEW DRYING TECHNOLOGY WITH LOWER ENERGY CONSUMPTION

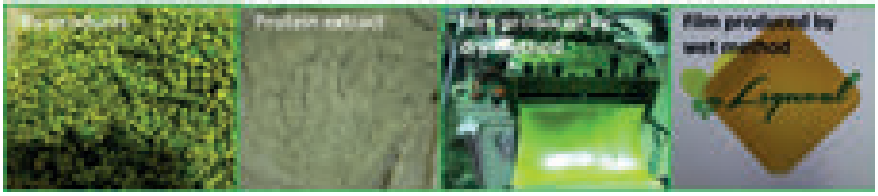
BY **GIROLAMO DAGOSTINO**

Public awareness of sustainability issues and the implementation of environmental regulations, especially with regard to waste disposal regulations limiting the use of petroleum-based plastics in applications where recycling is not easy, have pushed the industry to find new alternatives to such materials. According to the new market demand, bio-based plastics have found wider acceptance in the industry because they are considered more environmentally-friendly since they reduce greenhouse gas emissions and the dependence on crude oil; however, the concern regarding the use of raw materials in the production of bio-based plastics, which makes it competitive with food production, has increased.

For the last one and a half years, RTD performers from Europe (CNR-IPCF of Pisa, SSICA, Tecnalia, and Polieko) have been working together with three industry associations (Consebro, PCS, Assocomaplast) and five companies (Iris, Tehnos, RDX, Tuba, Lagrana) related with the food and plastics industry, to find more sustainable, and renewable, sources for the plastics industry. In particular, the main goal of the Leguval project is the valorisation of by-products that are currently discarded by the legume processing industry, in order to use them in the preparation of materials for agriculture, packaging and automotive applications for the plastics industry. The research leading to these results has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 315241.

To this end, during the first half of the Leguval project, the researchers tested by-products from each family of legumes. Pea by-products were selected because of the simplicity of the matrix, good processability, availability, and quantitative yield as raw material. Therefore, SSICA developed and optimised an innovative method to extract proteins at pilot scale from such by-products with a purity degree close to 80%. So far, the protein rich fraction has been used, on the one hand, by Tecnalia, to produce plastics films by wet method (casting and coating) with a barrier property improvement factor of 7-10 vs PET at 50% humidity and, on the other hand, by Polieko and IPCF, who are working together on the development of plastic films by dry method (extrusion).

The researchers involved in the project have adjusted the formulation so as to produce plastic materials easy to be processed at pilot scale, with the aim of integrating such materials into current industrial facilities. Moreover, the leftover biomass is being employed as additive for the preparation of composites and evaluated as a

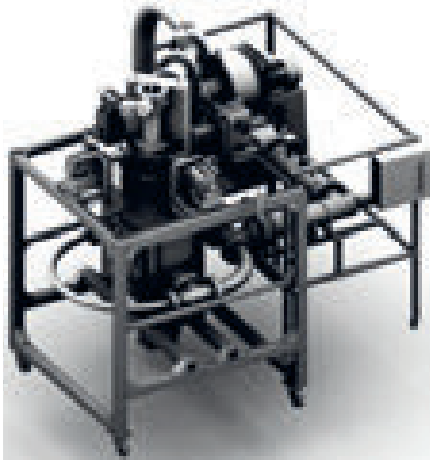


The different steps of the Leguval project

source of energy by anaerobic digestion, which will add new value to legume by-products.
Further studies will be developed during the second half of the project to validate the results at industrial scale. In general, the Leguval project is expected to have a very positive impact on the plastics industry as well as on final users since it will result in new bio-based materials, which will be renewable, compostable with improved barrier properties, and not food competitive.
www.leguval.eu

A NOVEL PROTOTYPE FOR AN INNOVATIVE MICROWAVE-SUPPORTED DRYING TECHNOLOGY

Within the HiPerDry project, a new prototype dryer for plastics pellets has been developed, combining microwave heating with superheated steam convective drying. An optimum antenna design will allow for gentle microwave application to avoid overheating or damaging the polymer. The system is designed for time and energy efficient drying of conventional and bio-plastics.
This European - funded from the European Union's Seventh Framework Program (FP7/2007-2013) under Grant Agreement n. 606425 - is now in its second year. The concept for the new drying technology was adapted to a Europe-wide benchmark analysis of current drying practices and a scientific investigation of the drying behavior of several important hygroscopic polymers. These included not only PA6 and PET, but also bio-polymers like PLA and PHB.
The construction of a pilot plant for the new drying system has successfully been realized. The use of specifically developed antennas fed by multiple magnetrons ensures gentle and efficient drying. Within the next months, a series of performance tests will follow for an evaluation of optimal operating parameters. The dryer will then be tested in industrial conditions and prepared for market entry.
The new technology is expected to significantly reduce drying time, while assuring the desired product quality. This will lead to a decrease in process energy costs of up to 50 per cent. An accompanying life cycle assessment (LCA) will evaluate the eco-friendliness and sustainability of the new technology.
Amongst the several partners of the project there are: the associations Anaip (Asociación Española de Industriales de Plásticos), Assocomaplast (Italian Plastics and Rubber Processing Machinery and Moulds Manufacturers' Association), BPF (British Plastics Federation), GKV (Gesamtverband KunststoffVerarbeitende industrie) represented by TecPart (Germany) and Plastipolis (France); the technology providers Bierther (Germany), Faperin (Spain), Heckmann Maschinenbau und Verfahrenstechnik (Germany); the research facilities Aimplas (Asociación de Investigación de Materiales Plásticos y Conexas, Spain), Fraunhofer Institute for Interfacial Engineering and Biotechnology, IKT (Institut für KunststoffTechnik) at the University of Stuttgart (Germany) and Stichting Dienst Landbouwkundig Onderzoek at Wageningen University (Netherlands).
www.hiperdry.eu



Rendering of the prototype dryer developed thanks to the European project HiPerDry

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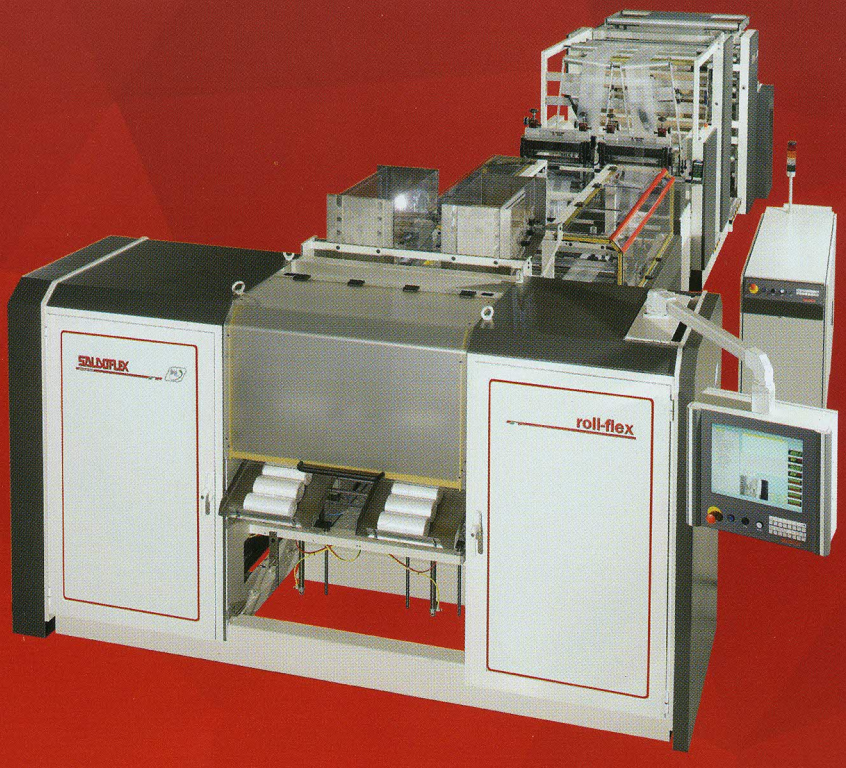

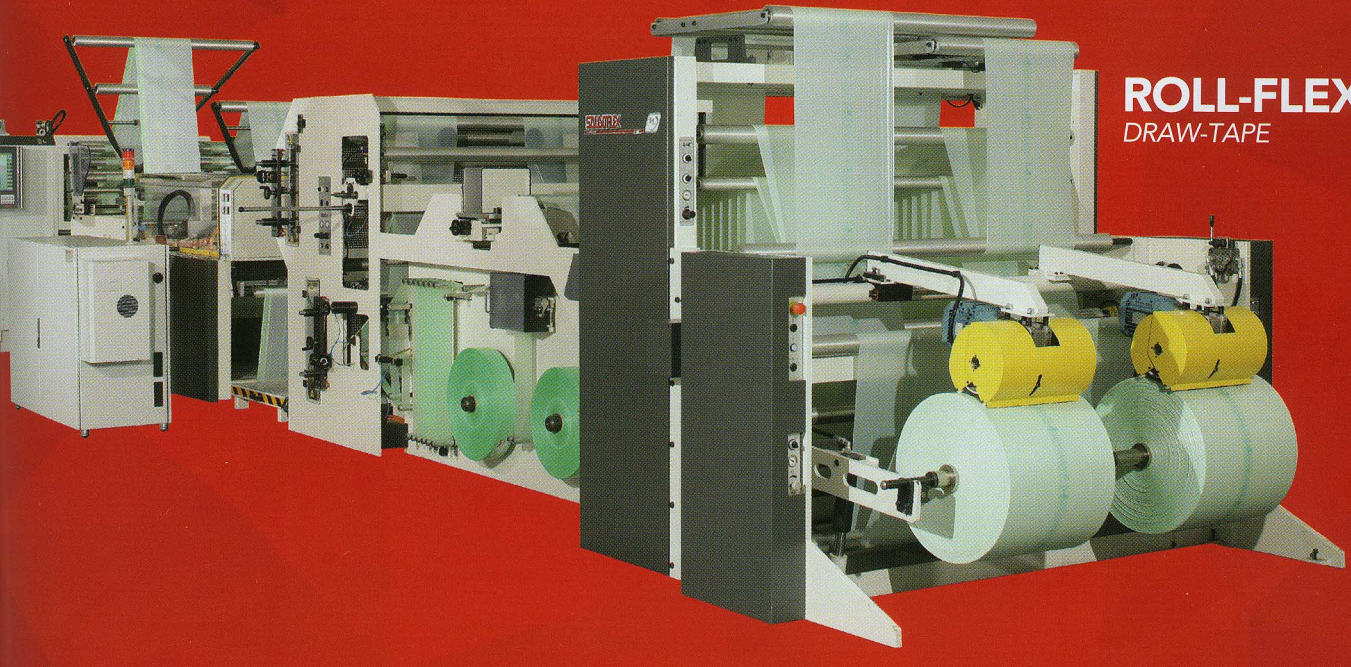

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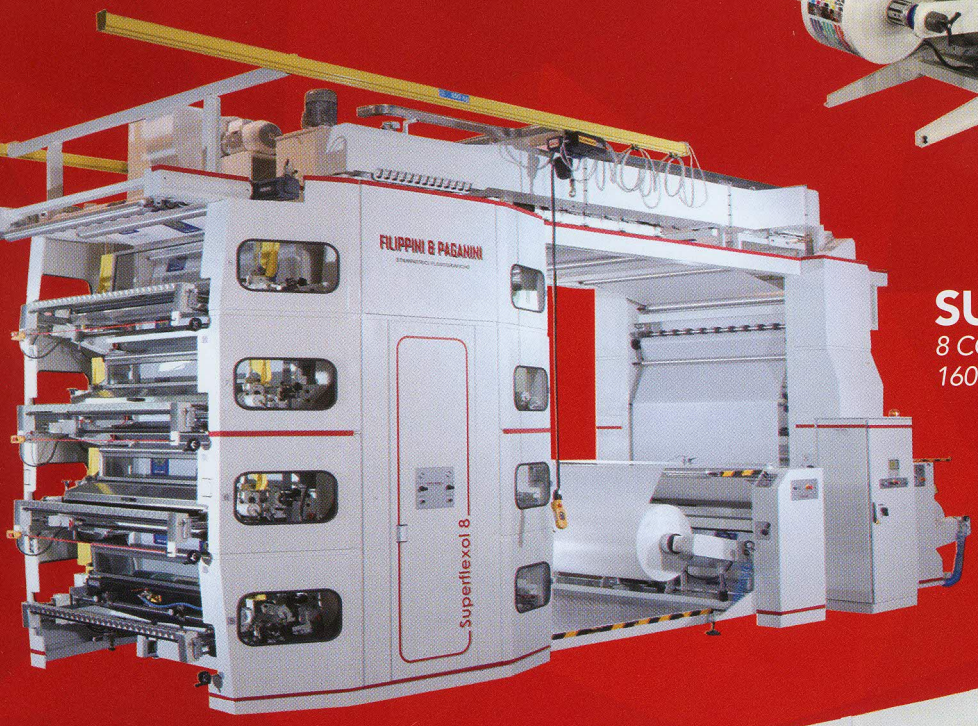

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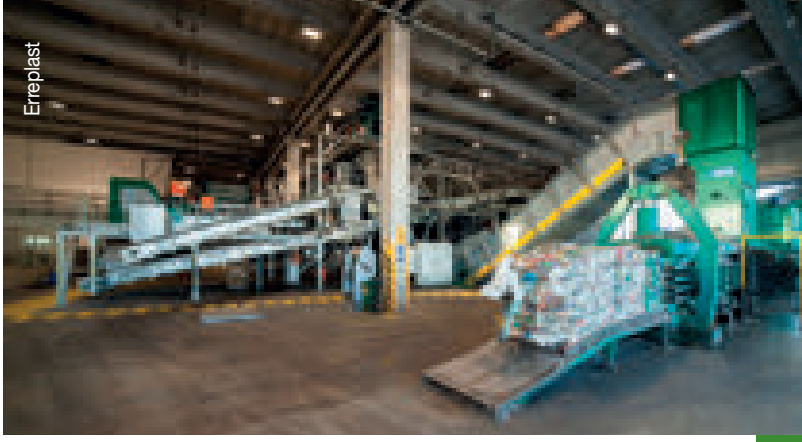

Erreplast

Positive figures in 2015

Plastic recycling boosting the best of Italy

The separate collection of plastic packaging in Italy grew in 2015 to reach a figure of 900 thousand tons (+8.4% as compared to 2014). This figure is truly impressive in the sector and is primarily the result of an increase in separate collection in the more "tried and tested" zones such as Veneto (with a figure of between approximately 21 and 23 kg per person) and the fact that it seems to have definitely taken off in the South of Italy too. Giorgio Quagliuolo, the president of Corepla points out: "There is one figure, which in itself highlights the ongoing change in attitude: +14% in the South. In the Campania region, in only a few years we have seen a complete turnaround, from a crisis situation in relation to the handling of urban waste to a per capita separate collection of plastic packaging which is only slightly below that of Lombardy. There has been an increase in other regions of the South, including Abruzzo and Sardinia. It is in fact this increase in separate collection which highlights the best industrial practices in terms of recycling, making our industry both competitive and sustainable on the global market".

"I also wish to add some further figures as concerns Corepla operations in 2015: with 900 thousand tons of plastics collected separately and 540 thousand tons recycled", continues Quagliuolo. "It has also been possible to reclaim even the type of packaging which is difficult to send for industrial mechanical recycling and reuse, and in fact 324,000 tons of such materials has been used to generate heat and clean energy to replace fossil fuels. These figures place us at the top of the league out the best countries in Europe, providing a great contribution towards an efficient circular economy, both from an environmental and economic point of view".

But this is not all. The separate collection of plastic packaging is becoming increasingly extensive throughout Italy: with 7,265 communities and 59 million inhabitants involved, which is 97% of the total. Overall recycling and reclaiming efficiency improved in 2015, with only 0.8% of the collected material (consisting of a portion of refuse that that is not recyclable or reclaimable) actually being sent to landfills. So that thanks to Corepla, it has been possible to avoid sending no less than 29 million cubic metres of waste to landfills. While Corepla has set aside over 260 million euros for the communities and their relative operators, to cover the greater costs involved in undertaking separate collection of plastic packaging.

The recycling of plastic packaging from separate collection has also contributed to the improvement of Italy's domestic energy budget, with a saving of over 9,500 GWh of energy having been achieved in 2015.

Finally, the average domestic waste collection figure has risen from 13.9 to 15.1 kg/year per inhabitant. With the North East of Italy having the highest figure in the whole of Italy. The Veneto and Trentino regions lead the way (23 kg/year per inhabitant), followed by the North-west (Piedmont and Lombardy with a figure of around 18 kg/year per inhabitant) and Central Italy (Marche 19 kg/year per inhabitant), finally the South and Islands, with Sardinia and Campania at the top with a figure of over 16 kg/year per inhabitant. In relation to these positive figures it must be pointed out that 2128 kt of plastic packaging was consumed in 2015 (51% being in the form of rigid packaging, 41% flexible packaging and 8% consisting of protective packaging /accessories) the most commonly used polymers being polyethylene PET and PP.

www.corepla.it

New study from Nova-Institut

European consumption of biopolymers will triple by 2020

Consumption of biodegradable and compostable plastics in Europe will triple by 2020. This is the finding of a study conducted by the German research institute Nova-Institut, having researched the situation in Austria, Belgium, France, Germany, the Netherlands, the United Kingdom, Scandinavia, Spain and Switzerland.

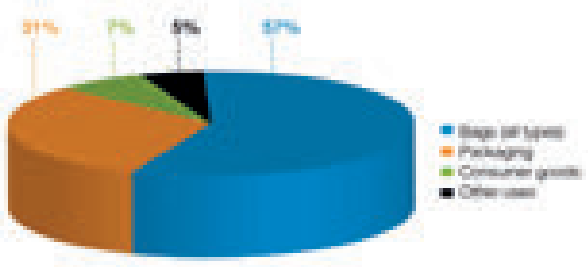
The report showed that, in 2015, compostable plastic bags, used primarily for the separate collection of organic waste, represented 69% of the entire biodegradable plastic product market, while the remainder was divided between packaging (20%), consumer products (7%) and other products (4%). Also last year, in terms of volume, consumption of bioplastics amounted to 100,000 tons, but by 2020, demand will have tripled to reach over 300,000 tons.

European legislation on the matter has at times slowed the market, but it has also been a driving force for development elsewhere. In 2015, Europe issued provisions to reduce the quantity of disposable plastic bags in the market, and Italy was one of the first countries to provide incentives for the use of compostable plastic bags, giving it a leadership position on the market (Germany instead faced numerous legislative obstacles which had repercussions for the industry).

The report also highlighted an increase in retail sales of PLA containers, a material used for numerous applications, from nonwoven clothing to bottles and packaging foams.

www.bio-based.eu - www.nova-institut.de

Projected EU 2020 market consumption of biodegradable polymers by application (total: 320,000 tons)



Source: Nova-Institut

NEWS

Partnership between Barbier and Novamont

A new compostable bag for fruit and vegetables


Groupe Barbier

The French group Barbier and the global manufacturer of bioplastics Novamont (stand A58, hall 6, at the exhibition K 2016) have signed a partnership agreement to develop a new type of bag to provide an alternative to traditional non-biodegradable and non-compostable plastic bags, to be marketed under the name Ma-Ter-Bio (bag for the earth).

It is a vegetable-based bag, in compliance with the provisions of article 75 of the French law on energy transition and green growth, and the decree that implements it, suitable for home composting in accordance with French regulation NF T 51-800, obtained from locally sourced starch and sunflower oil. Ma-Ter-Bio is made with at least 35% renewable sources, but this amount can be increased to over 50%.

The Barbier group, the leading French producer of plastic films, ranks sixth largest in Europe. It delivers polyethylene sheeting for agriculture and industry, and bags for the large retail market: for fruit and vegetables, waste collection, with soft handles. Committed to the principles of circular bioeconomy and energy transition, the company has been developing products from both recycled and biodegradable/compostable materials for over 15 years. Its products are covered by the "origine France garantie" label.

On the other hand, Novamont is the leading producer of the Mater-Bi compostable bioplastics, with a production capacity of 150,000 tons/year. Holding strong to its philosophy, the company opened a French subsidiary in 2006 to follow developments relating to the new energy transition law more closely. This is the background of the cooperation with the French group, laying the foundation for the supply of locally sourced materials as a first step towards the establishment of a production site on French soil. In Italy, Novamont has been able to relaunch five industrial sites that had been dismissed or that were in the process of being dismantled.

www.novamont.com - www.barbiergroup.com


Biocomp granules, the innovative family of bioplastics developed by Microtec

Biodegradable polymers

When respect for the environment is a priority

In the past few years, the company Microtec, with offices in Mellaredo di Pianiga (near Venice), has developed the production and sale of completely biodegradable and compostable additives in accordance with the EN13432 standards. These include Biocomp, an innovative family of bioplastics made with vegetable components and biodegradable polymers obtained from both renewable and natural sources, as well as from fossil fuel. Biocomp comes in granules, and it is processed using standard plastic processing technology. It is used to make products with the same or even better characteristics than traditional plastics, while it is completely biodegradable and compostable. All its products have obtained the "OK Compost" certification from Vincotte.

The materials have numerous applications and uses. The extreme versatility of the production lines and proven experience in the field of research have enabled Microtec to develop a variety of grades for the most diverse applications, such as packaging, agriculture, catering, accessories and toys.

Developed with the precise goal of introducing novelties and tangible economic advantages to all plastic processors, Microtec is a young and dynamic company, specialising in the production and distribution of colour masterbatches, additives and compounds.

As the company owners are quick to point out, they are very passionate and in just a few years they have created a new, spacious facility with a large warehouse, a state-of-the-art production department, and a sophisticated research laboratory. The company's work stands out for its serious approach, commitment, modesty, and also its pride in being a medium sized enterprise that delivers big solutions. Microtec's strengths are unquestionably competitive prices, excellent quality products, research into solutions that meet all needs, and a commitment to ensure constant quality. Trying to resolve its customers' production challenges is its main prerogative; securing real savings in purchases is a source of great professional satisfaction.

The Microtec product range currently also includes white, black and colour masterbatches (Micromaster), fine-ground mineral fillers designed to lower production costs (Microfiller) and the Microadd line of additives.

www.microtecsrl.com - www.mastercolour.eu

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NEWS

Another landmark for VinylPlus in Europe

Over 500 thousand tons of recycled PVC

"Together with our partners from The Natural Step, we will be reviewing our VinylPlus voluntary commitment and highlighting the relevance and sustainability of PVC products in the cities of the 21st century", declared VinylPlus president, Josef Ertl

In 2015 the voluntary programme VinylPlus resulted in the recycling of over 500 thousand tons of PVC waste: an upward trend in recycling, with window profiles and related products making up around 45% of the total amount recycled. This increased volume of recycled waste, which amounted to around 508 thousand tons in total, was recorded and certified by Recovinyl, the PVC waste collecting and recycling system that includes 177 companies throughout Europe. The aim is to be recycling 800 thousand tons per year by 2020.

The general director of VinylPlus, Brigitte Dero, stressed that the replacement of lead stabilizers within the 28-member EU is a historic achievement. Indeed, from this year, virgin PVC products supplied by European processors no longer contain lead. "This important result secured by ESPA (European Stabilizer Producers' Association)", she said, "marks the culmination of a challenging process that, throughout the pipeline, has necessitated close cooperation in order to overcome the technical constraints".

Dero also underlined the programme's commitment to tackling, in collaboration with the appropriate authorities, the problem of the "legacy additives" that are contained in recycled PVC, and feels that it is up to the European Commission to come up with realistic solutions that will allow the recycling of PVC to continue and be further developed.

"European cities are pioneers in the transition to a low-carbon and resource-efficient economy. The 72% of the EU population that lives in urban areas consumes 70% of our energy. To guarantee a good quality of life, tomorrow's cities will need to have healthy and energy-efficient buildings, reliable sewage systems and a reliable water supply, and affordable health care. Using PVC, instead of other materials, cuts costs, improves product performance, and makes a positive contribution to sustainable development", said the president of VinylPlus, Josef Ertl, recently. His remarks were echoed by Stephan Sicars, director of the environment department of the United Nations Industrial Development Organization (UNIDO), who said: "According to some estimates, new trends may potentially allow resource savings worth 3 trillion dollars by 2030, including a trillion in the globally emerging "green" market: the PVC production pipeline is making progress globally in reducing its environmental impact in areas such as the production of chlor-alkali, the consumption of energy, the use of mercury, and the production of CVM. We have seen some superb developments in different regions, especially in Europe".

www.vinylplus.eu

Students and smartphones

Phone covers from plastic waste

A team of Italian high school students has invented an incredible automatic vending machine that grinds used plastic bottles, reducing them into granules that are then processed by an integrated 3D printer and turned into covers for smartphones.

Saving our planet, creating a cleaner world for future generations, or simply doing the right thing: all these are valid reasons for recycling, but the truth is that some people need more materialistic incentives for a serious commitment to the environment. And this is precisely why these students decided to develop this ingenious invention, which could prompt more young people to recycle plastic waste, since the system turns it into attractive covers for today's most popular smartphones.

Marco Tomasello, Daniele Caputo, Vincenzo Virruso, Vittorio Maggiore, Toni Taormina and their teacher, Daniela Russo, were looking for an efficient way of getting young people more involved in protecting the environment, and they came up with the idea of constructing the system called MyProAction. Even though it looks just like a standard automatic vending machine, this device does not take coins, only plastic bottles, and in return it dispenses smartphone covers in a range of different designs.

It is not clear whether the covers are produced directly, each time a certain amount of plastic is fed into the machine, or whether the user is only able to choose from covers that have already been produced: the second hypothesis is the most likely, given that 3D printing can be quite a lengthy process. Whichever, the concept is very interesting. After all, a free cover in return for a few empty plastic bottles is a great deal.

The five students have described how they had no idea that their school project might actually be turned into reality, but after winning the Social Impact Award, conferred by AXA Italia following a nationwide contest, this cunning automatic vending machine has started to attract attention around the world. To date, the students have prepared four prototypes and they are now looking for a partner capable of producing them in series and distributing them. ■

https://www.facebook.com/MyProAction-778313318883378/

The MyProAction machine could become extremely popular in schools and other places where young people congregate, given that youngsters are always keen to give their phones a makeover. Photo: The team of young inventors


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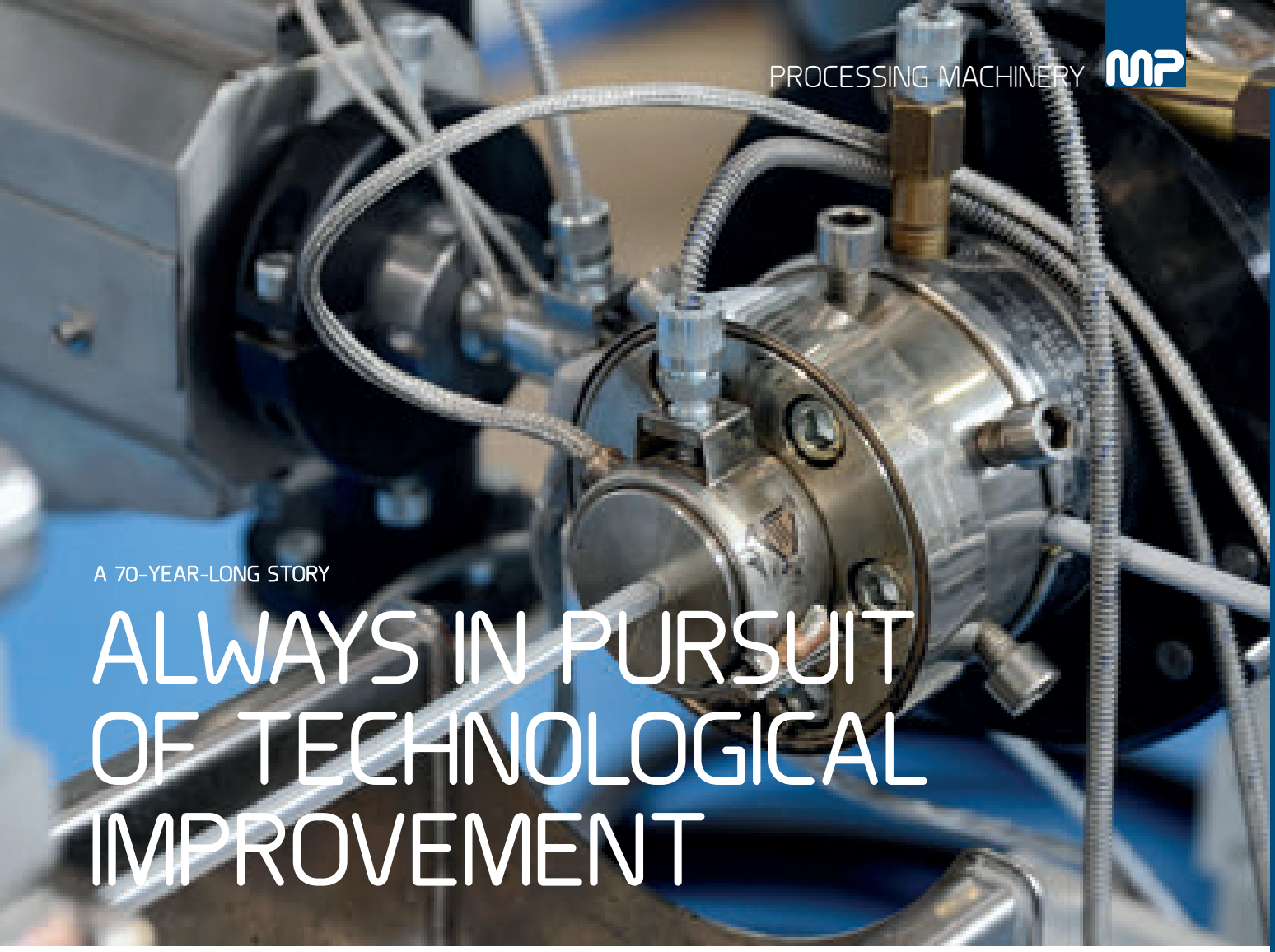

A 70-YEAR-LONG STORY

ALWAYS IN PURSUIT OF TECHNOLOGICAL IMPROVEMENT

IN 2016, BAUSANO CELEBRATES ITS 70TH ANNIVERSARY, A VERY IMPORTANT MILESTONE, WHICH TAKES ON GREATER SIGNIFICANCE CONSIDERING THE CRITICAL TIME THE MARKET HAS BEEN THROUGH RECENTLY. THE SAME PRIDE THAT FUELLED THE START AND THAT HAS PUSHED THE COMPANY FORWARD TO BECOME PART OF THE HISTORY OF PLASTICS IS STILL THERE, STRONGER THAN EVER, DRIVEN BY A CONSTANT DESIRE FOR IMPROVEMENT

In its seventy years of history, the company Bausano & Figli has always been directed by the Bausano family, able to combine a family-run business with the needs of a company that has gone international, never hesitating to entrust several important aspects of the business to capable employees. One of the key points of Bausano's strategy is, undoubtedly, not merely to propose a line or a finished product, but to meet the customer halfway, striving to satisfy every request, even the most peculiar, in order to meet customers' requirements.

The synergy between the sales network and technical support allows customers to obtain the best care and assistance and to experience the importance of being one of Bausano's customers. Over the years, Bausano has offered constant technological progress and ever-improving customer service, developing a network of technicians and agencies that can satisfy any market needs and requirements, however varied. The goal is to always provide a service including a technologically-advanced production line, advice and guidance on the choice, and the certainty of a reliable after-sale assistance.

The processor who has chosen, and will choose, a Bausano line has not made a choice purely based on economic reasons but knowing he can rely on a supplier that guarantees great experience and expertise, full support, and the safety of technology that "stands out", outperforming any other option on the market.

Over the years, other plants have been installed outside Italy. The first was set up in Sao Paulo, where machines destined for the Brazilian market have been assembled since 1999; more

The MD130 Plus extruder for the production of pipes

The TM80 extruder for medical applications

recently, a plant was installed in India, an investment which has lived up to the company's highest expectations. Today, Bausano is present in all major plastics markets, in those with a long tradition as well as in emerging ones.

The specific knowledge of each market and the widespread presence of the company within the markets is crucial in order to ensure direct contact with customers, fully understand their real needs, win their trust, and build customer loyalty.

The manufacturer guarantees advanced technology and high quality products for farsighted, discriminating customers who do not let themselves be easily attracted by cheaper products, which may be appealing at first but end up causing loss of production, being unreliable. Unsurprisingly, this strategy is proving to be a winner and an extensive market range has led customers to understand that the determining factor in the choice of a line is not the initial outlay but the cost/benefit ratio guaranteed by the increased lifetime of a line, product quality and service, able to ensure durability and, consequently, a higher return.

PRODUCT RANGE

Bausano's products are constantly improved and upgraded, in order to offer a comprehensive range of products, second to none. Some technologies that are the basis of the extruders have been maintained but have undergone continuous improvement, like the extensively-tested updated version of the Multidrive system, which is still a winner.

The principle is always the same: every type of production facility needs optimizing over time as technology is constantly changing. Processors must keep pace with the change if they still want to be key players in worldwide production. The focus is then, and not by chance, on R&D activities, fundamental for growth and to maintain leadership.

With this in mind, in 2016, a new test room was completed at the main plant in Rivarolo Canavese (Turin). Each system can be tested there prior to delivery and practical tests on theoretical solutions proposed by the company's design department are carried out.

Another new feature is the adoption of two new, vertical, fully-automated, automatic storage units, which will improve overall company's performances and services by reducing material delivery time, streamlining its processes even further.

Moreover, spare parts of the machines, including those with over thirty years of activity, are kept in stock, as dictated by the company policy. Another benefit for customers is the progress made in terms of energy saving: the aim is to ensure higher performance with lower power consumption, which results in higher profits for customers.

Within the more traditional side of the production range the granulation lines, particularly those dedicated to PVC, should be mentioned. In some countries, Bausano is the undisputed leader for this type of machinery, strongly associated with its brand. Extrusion lines for PVC pipes and profiles continue to be among the most successful products in the company range.

In the last decade, also the medical product lines (sack, sheet and PVC and EVA tubes) have increasingly acquired importance.

Among them, the newest are: a medical tube extrusion line and an embossed bag medical line. The former features a new coextrusion head allowing the creation of flexible PVC pipes with coloured or radiopaque band, with greater ease and rapidity of dimensional change. It is also equipped with a new inox tank with double air gap, automatic control of the diameter and the ovalization of the tube.

The embossed bag medical line features a three-roll thermo-conditioned calendar with embossing roll in the central position. This innovative product, thanks to the embossed surface, prevents the adhesion between the two layers of the bag, normally caused by friction, facilitating its use and making the system safer.

Bausano also manufactures WPC lines for the extrusion of wood-plastic mixtures: highly innovative and versatile materials, ensuring high performance. They feature greater resistance to weathering and UV, fire resistance, ease of processing, and 100% recyclability.

A PVC tile sheet line, which adds aesthetic value to the previously existing products, completes the company range of products. Developed over the last three years, it provides remarkable results in terms of versatility of the extruded product and is becoming more and more popular, especially in some countries: this type of profile extrusion requires technology that only experienced companies can provide.

As with every previous edition, Bausano welcomes the opportunity to present the best of its technology to the market at the K exhibition in Düsseldorf (stand B70, hall 16).

This year the company is proud to showcase three extruders, representing the best in their respective fields:

- the latest extruders, MD 75/30, MD 92-30 and MD130-30.

But there is more to be seen, that is:

- the completely new version of the TGL side cutter for PVC granulation lines;
- the new concept of chiller granules.

Besides, the company's presence at the fair aims to send, as always, a signal and a message of confidence to the market and to old and new customers alike.

Bausano & Figli has been around for 70 years, and will continue to be there.

www.bausano.it

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A DOUBLE APPOINTMENT FOR BANDERA

AT THE K SHOW AND AT THE HOUSE OF EXTRUSION

THE ITALIAN MANUFACTURER TAKES PART IN THE TRADE FAIR IN DÜSSELDORF AND ORGANISES AN OPEN HOUSE AT ITS HEADQUARTER IN BUSTO ARSIZIO (ITALY), WHICH TAKES PLACE AT THE SAME TIME AS K 2016. A DOUBLE COMMITMENT TO PRESENT THE COMPANY'S TECHNOLOGICAL DEVELOPMENTS TO AS MANY PROCESSORS AS POSSIBLE

At K 2016, visitors have the chance to see Bandera's latest high-tech solutions for packaging and converting in action (hall 17, booth 06). An example is the 5-layer coextrusion blown film line, featuring top flexibility, suitable for producing both polyolefin and barrier film, and equipped with an innovative device, specifically designed to enhance film quality. But as K 2016 welcomes its visitors, Bandera opens its doors at "The House of Extrusion" in Busto Arsizio (Varese, Italy), to host an open house where other blown film lines as well as flat die extrusion lines intended for the rigid packaging sector will be live on show.

TWO NON-CONTRADICTORY CONCEPTS

Nowadays, it is essential to combine specialization and flexibility. At first glance, they may seem to be contradictory concepts, but the market players look for and expect to find both, now more than ever before. For this reason, the Bandera's team act as pace setters to develop equipment offering both features. The SmartFlex and TechnoFlex Plus series are a clear proof of the effort made to combine such features: capable of manufacturing different kinds of film, they maintain and ensure top level performance and unrivalled quality. A further example is the 7-layer extrusion line. Tested last year at Bandera R&D centre, this solution offers top polyolefin film output capacity and high barrier film production.
Another increasingly crucial topic is industrial energy efficiency. Bandera is committed to minimising power consumption by developing new solutions in collaboration with specialised companies. Furthermore, the company is focused on ensuring the best cost/performance ratio, also taking into consideration the white certificate scheme, which proved to be of the utmost importance for Bandera customers.

PACKAGING: A VERY IMPORTANT GLOBAL MARKET

The main characteristics of the TechnoFlex Plus 5-layer blown film line shown at the K fair are the following:

- materials: LDPE and blend with LLDPE, mLLDPE, EVA, HDPE and MDPE, EVOH, PA
- lay-flat: up to 2,400 mm trimmed, tubular film 2,500 mm
- thickness range: from 20 to 200 µm
- output: 700 kg/h for PE film, 500 kg/h for barrier film
- 25-component loss-in-weight dosing system

Blowing section of a Bandera extrusion line

Winder, loading and unloading system of a Bandera plant

- 2 extruders with 75-mm diameter for internal and external layers
- 3 extruders with 65-mm diameter for internal layers
- 5-layer coextrusion head with 500-mm die and IBC system
- 8 ultrasound sensor system for automatic IBC management and width control
- high efficiency triple flow cooling ring
- automatic thickness measuring and adjusting system
- special barrier layer measuring system
- double bubble guiding cage system
- rotating haul-off with 2,600-mm wide rollers, torque motors and side guides with carbon fibre rollers
- FTA annealing system to improve film planarity
- double side Corona treatment
- double station back-to-back winder with contact, axial and gap winding mode with automatic reel downloading and mandrel loading system
- brand new line supervisor software including changeover active control of the dosing system and automatic format change

The packaging and converting sectors have a bright future. This global market is very important for Bandera. Requests for cutting edge technology are increasingly coming from every corner of the globe - the consolidated European trend is to look for very technical performing film combined with minimised costs, and to shift from mono to 3-layer film, to get to the cutting edge 5, 7, 9 and even 11-layer extrusion lines, according to customers' final product.

It is therefore essential to meet market needs - which proved to be complex and varied - and to make any effort to anticipate the needs that will emerge in the years to come. In order to promptly answer any customer's requirement - even the most demanding ones - through cutting edge solutions, Bandera has always kept 100% of its research and development, design and manufacturing, extrusion line testing and, last but not least, its precious know-how, in-house.

OPEN HOUSE IN ITALY

During K 2016, Bandera hosts an open house in its "The House of Extrusion" brand new R&D department, where the three following lines, dedicated to flexible and rigid packaging industries, are shown:

- a 5-layer Agrifuture coextrusion blown film line for agricultural film featuring: 5 extruders with 75-mm diameter for internal and external layers; 5-layer coextrusion blown film head with die with 650-mm diameter;
- an Alfa Line extrusion line for PET foils and sheets for thermoforing with: raw material dosing device for 2C85 corotating twin screw extruder; backflush super filtration system for continuous operation; TR75 single screw co-extruder;
- an Alfa Line Plus extrusion line for PP and PET rigid film including: raw material dosing device for 2C105 corotating twin screw extruder; backflush super filtration system for continuous operation.

www.luigibandera.com

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A view of the Maris Technological Center

MARIS TECHNOLOGICAL CENTER

THE IMPORTANCE OF TESTS

TRAINING IS AS IMPORTANT FOR TECHNOLOGISTS, TO KNOCK DOWN LIMITS IMPOSED BY THE MARKET, AS IT IS FOR A BOXER TO BEAT HIS OPPONENTS. TO THIS PURPOSE, MARIS (STAND B59, HALL 16, AT K 2016) HAS CREATED ITS OWN "GYM": THE TECHNOLOGICAL CENTER, DIVIDED INTO THE TESTING AREA AND THE CHARACTERIZATION LABORATORY

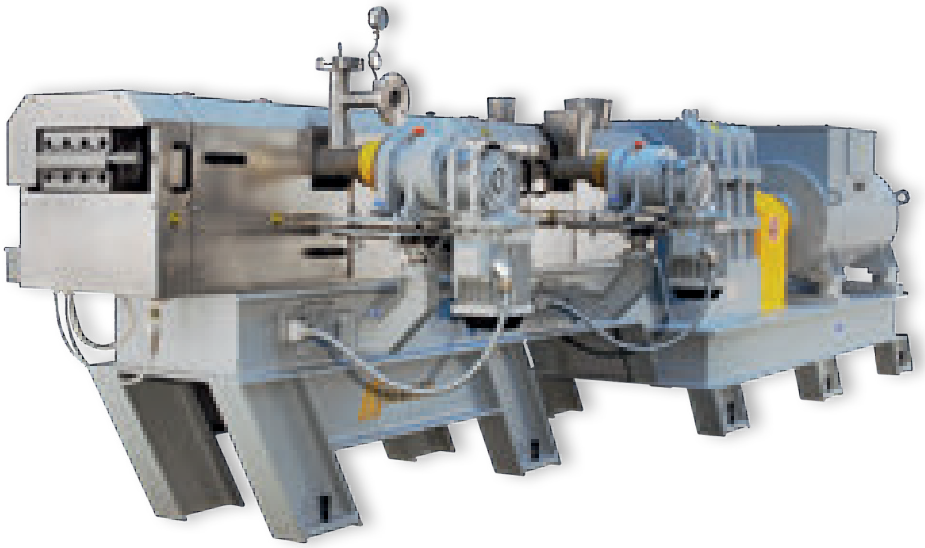
As with a boxer, who needs to constantly train very hard to beat his opponents, technologists need to do exactly the same to knock down the limits set by the market laws. In the sectors of synthetic materials and biomaterials, for example, these limits are periodically overcome by new products, which are tested in a laboratory first, and then made available to the market and distributed, improving quality of life.

Funnily enough, behind these incredible material evolution, there is just one machine: the corotating twin screw extruder, an efficient dynamic continuous mixer, flexible and adaptable to different types of processes, ensuring continuous material feeding. Of course, with the aim of keeping pace with the constant evolution of the market, it is necessary to have business intelligence and flexibility, moving fast so as to quickly offer new solutions for the problems arising day-by-day.

THE TECHNOLOGICAL CENTER

As it happens with a boxer, who cannot imagine getting on the ring without training, in the same way, an extruder manufacturer cannot place equipment on the market without testing its performances on the different applications. That is why Maris has created its own "gym", the place where it trains to solve process problems together with its customers, testing their own materials: Maris Technological Center, an R&D department divided into two areas, the testing area and the characterization laboratory.

The testing area, besides being the company showroom, is the heart of the R&D process. Here, there are four complete extrusion lines: two laboratory-scale lines (models TM 20HT and TM30HF) and two production-scale lines (models TM41HS and TM 58HF), permanently installed and at full disposal of the company staff to allow the correct setting of the complete lines for each type of process. In addition, Maris extrusion lines include all the upstream and downstream auxiliary devices, to permit the exact simulation of the most



A Maris TM HT
twin screw exruder

different extrusion processes.
The characterization laboratory allows real-time checking of the properties of the materials produced in the testing area. Such features, compared with a reference sample supplied by the customer, allow discriminating the effects of the different process variables on material quality, providing the testing area with guidelines to continue the compounding tests.

HOW DOES THE WORK AT THE TECHNOLOGICAL CENTER ORIGINATE AND DEVELOP?

It all starts from the need of a customer, who asks the company to test their formulations in the technological laboratory. The technicians discuss any possible problem linked to material feeding or to the process (thermal profile, screw profile, filling grade of the screw), then start carrying out the tests on the pilot plant (TM 20HT and TM30HF) with small amounts of materials, in order to produce a sufficient number of samples.
The characterization laboratory analyses the products using internal methods, specially designed to be quick and similar to those used at the time of production, in order to obtain a very rapid response on material quality. At the end of the tests, the customer supplies the relevant quality data for cross analysis, which should confirm the results of the analysis carried out in the centre. In this way, the company can define the conditions to carry out tests on industrial productions by means of higher size extruders (TM41HS and TM 58HF). This passage is fundament to produce a large quantity of material to be tested by the customer but also to provide suitable information for the scale-up phase, so that the machine is effectively tailored to the customer and its requirements.

"EXTRUSION TIME"

A strong focus on technological development is behind the company's decision to offer "Extrusion Time", an assisted rental of the laboratory extruder, a TM20HT, available to everybody, but intended in particular for research centres and universities, to which convenient rates are granted. Thanks to this machine, it is not only possible to produce little quantities of common materials as compounds or masterbatches, but also adhesives. Furthermore, the machine can be used for reactive extrusion, recycling of vulcanized elastomers, polymerization and to try to produce in a continuous way what is normally produced in batches.
Customers who apply for "Extrusion Time", have the possibility to use, always assisted by the company staff, the characterization laboratory for mechanical, rheological, morphological and optical investigations (in the centre there is a small injection press, which allows the printing of samples).

The vulcanized rubber recycling process by Maris permits to produce material that could be directly re-entered in the production process of new products

RUBBER DEVULCANIZATION

In order to give its contribution to environmental safety, Maris has developed a vulcanized rubber recycling process, which produces a plastic material that could be re-entered in the production process of new products. After many laboratory and industrial tests, a machinery has been fine-tuned in a way that, by just modifying the process variables, it permits to obtain plastic material for different types of elastomers, such as NR, IR, EPDM, SBR, FKM, NBR, butyl rubber, silicone, and acrylic, which come from technical items, tires, production and post-production scraps. Several plants are already operating worldwide.

www.mariscorp.com

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Luca Corti *communication*

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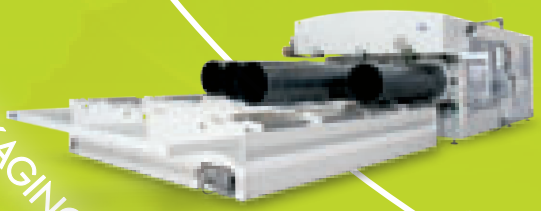

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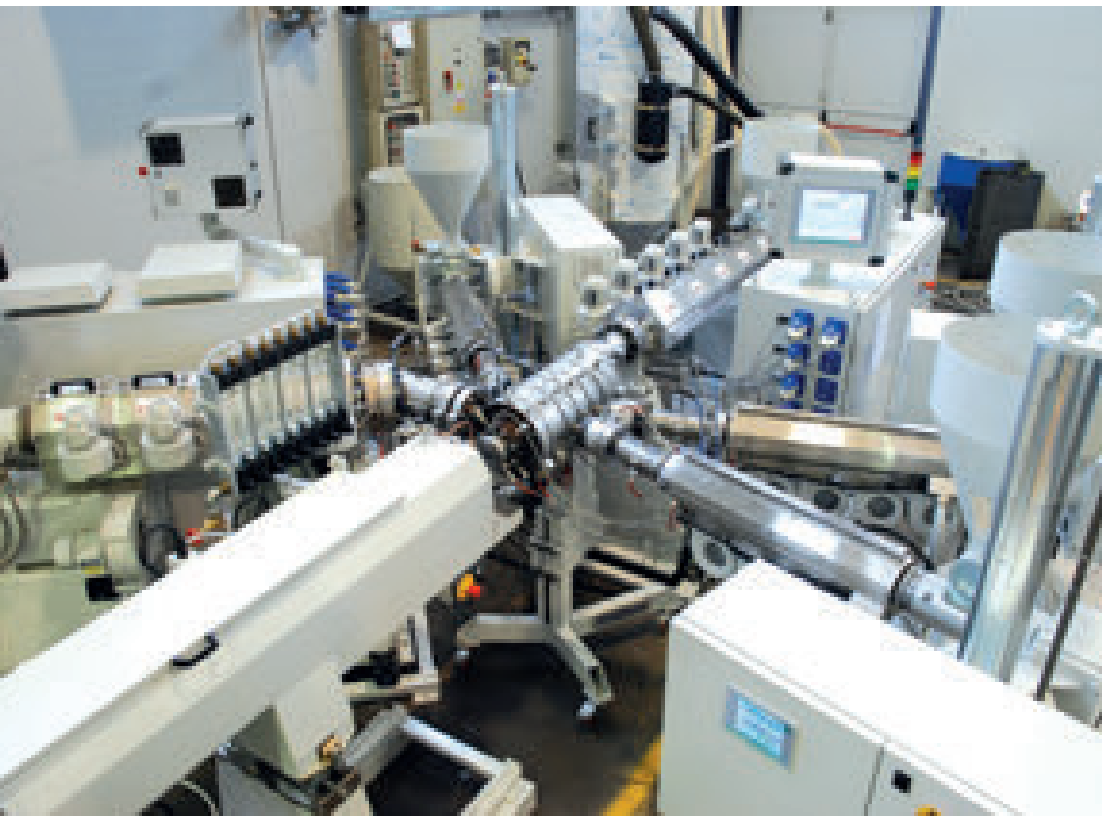


NOWADAYS, ANY INDUSTRIAL PROCESS REQUIRES HIGH QUALITY PRODUCTS AT EFFICIENT OPERATION COSTS. THIS PRINCIPLE IS ALSO TRUE IN MANUFACTURING PLASTIC PIPES AND HAS LED TECNOMATIC TO DEVELOP A NEW GENERATION OF EXTRUDERS AND DIE-HEADS, IN ORDER TO OFFER PERFORMING PRODUCTS FOR INCREASINGLY DEMANDING APPLICATIONS

TECNOMATIC AT K 2016: ADVANCED SOLUTIONS FOR PIPE MANUFACTURING

AIMING AT ENERGY AND PERFORMANCE EFFICIENCY

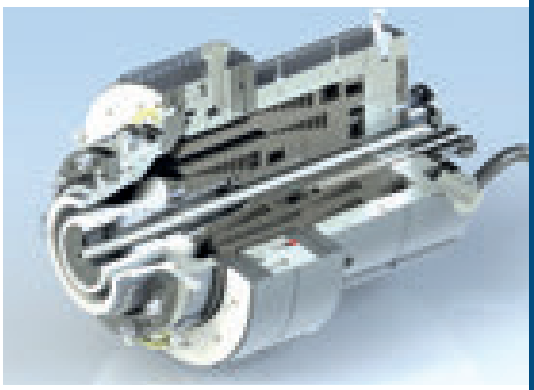
Pipe manufacturers have started to think in terms of operation cost efficiency, but without compromising the performance of pipe extrusion lines. At K 2016, Tecnomatic (hall 16, booth D05), which celebrates its 45 years of experience in the plastic sector, presents innovative solutions in pipe extrusion, to assist customers not only by supplying extruders and die-heads but also providing complete production systems for a line of business which is getting increasingly demanding. At the K show, Tecnomatic introduces a further developed version of its extrusion series Zephyr with L/D=40, both in a gearless and a traditional version (with gearbox).

ZEPHYR EXTRUDERS

Zephyr is the most performing line of extruders in the Tecnomatic's product range. It boasts an array of advanced technical solutions, which make such a series of unique models, designed for pipe manufacturers, look for highly energy-efficient machines, offering extreme output performance at lower melt temperatures. Innovation spans the entire extruder, the new spiral grooved bush, screw and motors.

Pipe extrusion is highly dependent on electricity and most of the energy usage is in operating the extruder. The Zephyr series has focused on this as its top priority, offering extruder increased screw length, smaller torque, and AC water-cooled motors, to achieve the same output of bigger size extruders while improving energy efficiency.

The new feed bush ensures minor friction, commonly generated by the transport of raw material, with the subsequent increase of the specific and total throughput. The further development in screw design, with optimization and enhancement of torque and shearing elements, has improved output and also led to process material at lower melt temperatures.



Venus Multi 250 Quattro die-head, for the production of PE pipes up to 250 mm in 4 layers, with PAC system (Pipe Air Cooling)

To meet the requirements in terms of production efficiency, the machines are equipped with torque or water-cooled motors (in this case, with one-step or two-step gearboxes) and compact water-cooled inverters. These solutions, com-

bined with the mechanical features, ensure outstanding energy-efficiency, low noise operation (less than 74 Db), reduction in maintenance workload, greater efficiency within wide speed and load ranges, and faster dynamic response.

VENUS AND ATHENA DIE-HEADS

Besides the extruders, Tecnomatic also displays multilayer die-heads from the Venus and Athena series: the Venus Multi 250 Quattro - for the production of PE pipes with a diameter up to 250 mm in 4 layers, with PAC system (Pipe Air Cooling) - and the highly innovative Athena 5-40, offering improved performance to the market of PE-x and PE-rt pipes.

Athena heads are made with the addition of radial modules based on the number of layers to be produced. The radial distributors do not have any dead zones or edges, where material could stop, and allow easy cleaning and rapid assembling/disassembling operations. The radial spirals ensure low pressure losses and high flexibility in terms of layer structure (thick or thin layers) and number of layers, while their short flow path leads to reduced residence time and rapid material and colour changes.

In a market increasingly looking for highly innovative developments and continuous improvement in the properties of the material, single-layer pipes are not always able to fulfil the necessary requirements. Tecnomatic has well interpreted emerging customer needs and has developed, on the basis of the Venus concept, a full range of die-heads for the production of 2, 3 or 4 layer polyolefin pipes, even in a large size. A project in 1,200 mm three layers, carried out in 2013, is the milestone of the multilayer production made by Tecnomatic.

The heart of the Venus Multi consists in an innovative flow channel geometry, which has been calculated in consideration of the current raw material, PE 100 CR and PP. This geometry ensures the same behaviour for pressure and distribution of the melt in all the pipe heads, also at very high output rates.

The new feeding system of the spiral channels, the matching ranges and the small die sets contribute to reducing pressure. This greatly influences energy consumption during extrusion, considering that approximately 5 to 10% of the extruder power is necessary for pumping. Lower pressure also results in a lower increase of the melt temperature and, with lower residence times, pipe characteristics are significantly improved with regard to OIT (oxidation resistance) values, extra weight, and thermal and shear stresses reduction.

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THE K 2016 OF HAITIAN INTERNATIONAL

FLEXIBILITY WITH TECHNOLOGY TO THE POINT

AT THE K 2016, HAITIAN INTERNATIONAL PRESENTS ESTABLISHED BESTSELLERS FROM ITS SUCCESSFUL "TECHNOLOGY TO THE POINT" MARKET STRATEGY. FURTHERMORE IT LAUNCHES THE FULLY ELECTRIC ZHAFIR VENUS II SERIES "P", TOGETHER WITH THE TWO-PLATEN HAITIAN JUPITER II SERIES WITH MUCELL, AND THE ELECTRICAL ZERES SERIES WITH 192-CAVITY MEDICAL APPLICATION. FINALLY IT CELEBRATES ITS 50 YEARS OF ACTIVITY

Under the motto "Flexibility with Technology to the Point", Haitian International is demonstrating in Düsseldorf (stand A57, hall 15) its highly efficient solutions for standard applications that still meet 80% of the market requirements. The course for the future development strategy had already been set out at K 2013: electric solutions in the smaller clamping-force categories, two-platen technology in the big clamping-force categories. At the end of 2015, the financial results have proven that this is the right path: the share of sales of the electric Zhafir machines rose from 11.1% to 14.8% in the small tonnages, and the share of sales of the two-platen machines increased from 19.5% to 28.5 % in the medium and large tonnages. This trend has been continuing to the present.

Frequent mould or colour changes, increasingly short product life- cycles, and small "on demand" batch sizes require even more flexibility from processors and greater ability to respond at competitive machine-hour rates. Haitian International is reinforcing the clear position it has taken by continuing to rely consistently on flexible, versatile manufacturing solutions that offer a high level of quality at an extraordinarily good price-performance ratio.

EUROPEAN LAUNCH OF THE FULLY ELECTRIC VENUS "P-VERSION"

Approximately 30% of the packaging applications in Europe have extremely short cycle times of 2-3 seconds, high cavity numbers, and therefore high output. Zhafir Plastics Machinery concentrates on packaging market of more than 4 seconds, for example containers or caps and closures for the cosmetics industry.

The packaging version of the already established fully electric Venus II series has been specially adapted for this product group. Using a square-shaped platen design, for example, gives more room, and a modifying machine bed ensures higher stability with

The fully electric Venus "p-version" debuts on the European market at the K show

multi-cavity moulds. A special ball screw also on injection unit avoid overheating during fast cycling. Fitted with an L/D 25:1 plasticizing unit and with injection speeds of up to 350 mm/s, the fully electric precept inherently offers ideal conditions for dynamic and highly accurate processes. The p-version of the Venus is available with clamping forces from 1,500 to 4,500 kN (the full range of Venus II series models covers 400 to 6,500 kN).
At the K show, Haitian is exhibiting a VEII3000/1700p that produces an IML cup in 4.4 seconds, integrated into an automated cell by Sepro Robotique and Pagès.

ZHAFIR ZERES SERIES: ELECTRICS WITH INTEGRATED SERVO-HYDRAULICS

With the electric Zhafir Zeres, Haitian International has broadened the Venus range to

The Jupiter II series was launched in 2013 and in 2015 registered a sales increase by 40%; further important improvements have been introduced with the recent "Plus" updating

Injection moulding

A special machine for BMC

Thanks to the many bespoke solutions that characterise its production, the Brescia-based company IMG (Italian machinery manufacturer and distributor of Haitian products) is always able to offer its customers, which tend to use the most diverse moulding technologies, innovative systems for multi-component injection moulding of thermoplastics, original systems for loading and injecting silicone, in liquid and/or "paste" form, as well as special systems for loading and injecting bulk moulding compounds (BMC). For this last application IMG has, in fact, created a special machine that it is worth describing here. First, though, it is useful to take a quick look at what these compounds are.

Bulk moulding compounds, or BMCs, are special compounds used in compression and injection moulding. One of their features is that they can be reinforced through the addition of glass, carbon, mineral or aramid (natural or mixed) fibers, typically in percentages of up to 65%.

BMCs are used mainly in electrical applications. Generally speaking, the use of thermosetting materials, like BMCs, is recommended when there is a need for good mechanical properties, but also when different product sections show different thicknesses. The guaranteed absence of sinks and internal cavity alterations, as well as the dimensional stability over time and high resistance to high temperatures (contrary to what is seen with thermoplastics) are other excellent features of thermosets.

"We have recently produced a special machine, used in the manufacture of electrical components, that processes BMCs in an innovative way", begins Carlo Frigerio, sales director at IMG.

The special machine for BMC (Bulk Moulding Compound), used in the injection and compression moulding

BMCs are thus materials with some remarkable properties - first of all, they are fire retardant - and in various application settings their use has become compulsory, as Frigerio goes on to explain: "Given that BMCs are materials that do not give off fumes in the presence of flames, and since it has been discovered – in dramatic circumstances sadly - that as many as 50% of the deaths resulting from a fire starting, for example, inside a carriage will be caused by suffocation and not by burns, our national railway company has made it obligatory to use BMCs as the material for the supports for certain electrical components. I am not at liberty to say what these applications are, as this information is currently a business secret. What I can say, however, is that basically an electrical part is inserted into a mould and then embedded into BMC.

And we are talking about considerable thicknesses that require very long curing times!

In order to reduce, as far as possible, these cycle times, IMG has created a machine with to twin clamping units, but only one injection unit that, positioned on the far side from the operator, moves from one clamping unit to the other. In this way, once the injection of material into mould "A" is complete, there is plenty of time to move the injection unit across, like a shuttle, so that it can perform a second injection into mould "B". Obviously the most interesting aspect of this machine is precisely the fact that it is equipped with only one injector".

Thanks to this "shuttle cycle" solution, IMG's technicians have managed to reduce the curing times by more than 50%, which is no mean feat.

www.imgmacchine.it

enhance new possibilities. This enormously flexible machine with base technology of Venus series but integrated servo-hydraulics for core pull applications, to give an example, offers plastics processors a demand-driven solution at the very highest level.

"With the Zeres series, we make it easier for processors to make the switch from hydraulic to electric machines. Zeres is the optimal machine for moulds with core pulls and for mouldings where high quality is much more important than very short cycle times, such as optical components", says Philippe Porret, member of the management at Haitian International Germany.

While structurally identical with the Venus II series, Zeres enjoys all the advantages of electric injection-moulding technology: precision, energy efficiency, independent parallel movements throughout the entire cycle, and, not least of all, ease of maintenance. Servo-electric drives for injection, dosing, and mould movement ensure high dynamics. An integrated hydraulics for minor axes makes Zeres also usable for applications with core pulls or standard precision components.

A servo motor pump handles the auxiliary movements such as core pull, ejector, and nozzle system. The servo motor power is precisely adapted to the performance needs of the minor axes and thus guarantees high energy efficiency and profitability. Pressure and flow are perfectly regulated.

In this way, Zeres gives the processor not only the broad versatility of electrics but also more production efficiency through double-digit savings in energy in percentage terms at the same time. Zhafir's entry-level model into the "fully electric world" is available in clamping forces of 400 to 6,500 kN. At the K show, a Zeres with 300-ton clamping force manufactures a medical pipette on a 192-cavity mould in around 9 seconds.

TWO-PLATEN TECHNOLOGY: JUPITER II SERIES WITH ADDED "PLUS"

Since the introduction in 2013, the Haitian Jupiter II series in 2013 has been registering considerable success year after year. In 2015, the sales increased by 40% compared to the previous year. The latest upgrade to the Jupiter - simply called "Plus" - has led to significant improvements.

The technologically robust Jupiter II series is convincing not only because of its rapid, frictionless mould movements, and highly economical energy consumption, but also because of its compact design. As such it saves an amazing amount of space, and in addition it operates very quietly.

A model of the Zhafir Zeres series

In terms of clamping, the new, decentralized clamping system gets even more dynamics and achieves significantly shorter dry-run times. Various components have been newly designed, replaced, or optimized for this purpose. Among the essential changes are, for example, the optimized and now significantly faster traveling cylinders as well as new cylinders for the half-nut mechanism. More freedom from wear is guaranteed by the non-contact, digital position-sensor system for rapid reaction times using CAN bus communication, and maximum accuracy of positioning (±0.05 %).

"Many of our customers' products and requirements vary greatly so that time and again they have to modify or readjust their manufacturing processes. The rapid mould change on the Jupiter II assists them greatly in this. In addition, this model range had already been expanded downwards to 450 tons last year, making the Jupiter machine a real shooting star performer in Europe for automobile suppliers, for example", says Philippe Porret, also responsible for the key account.

Jupiter is equipped with a powerful Keba control unit (1.4 GHz CPU) that has Ethernet (Ebug, Easynet, OPC) and EtherCAT and can be rapidly and easily configured in comfort by the operator on a 15-inch color LCD touchscreen with its operator-friendly, double-page view.

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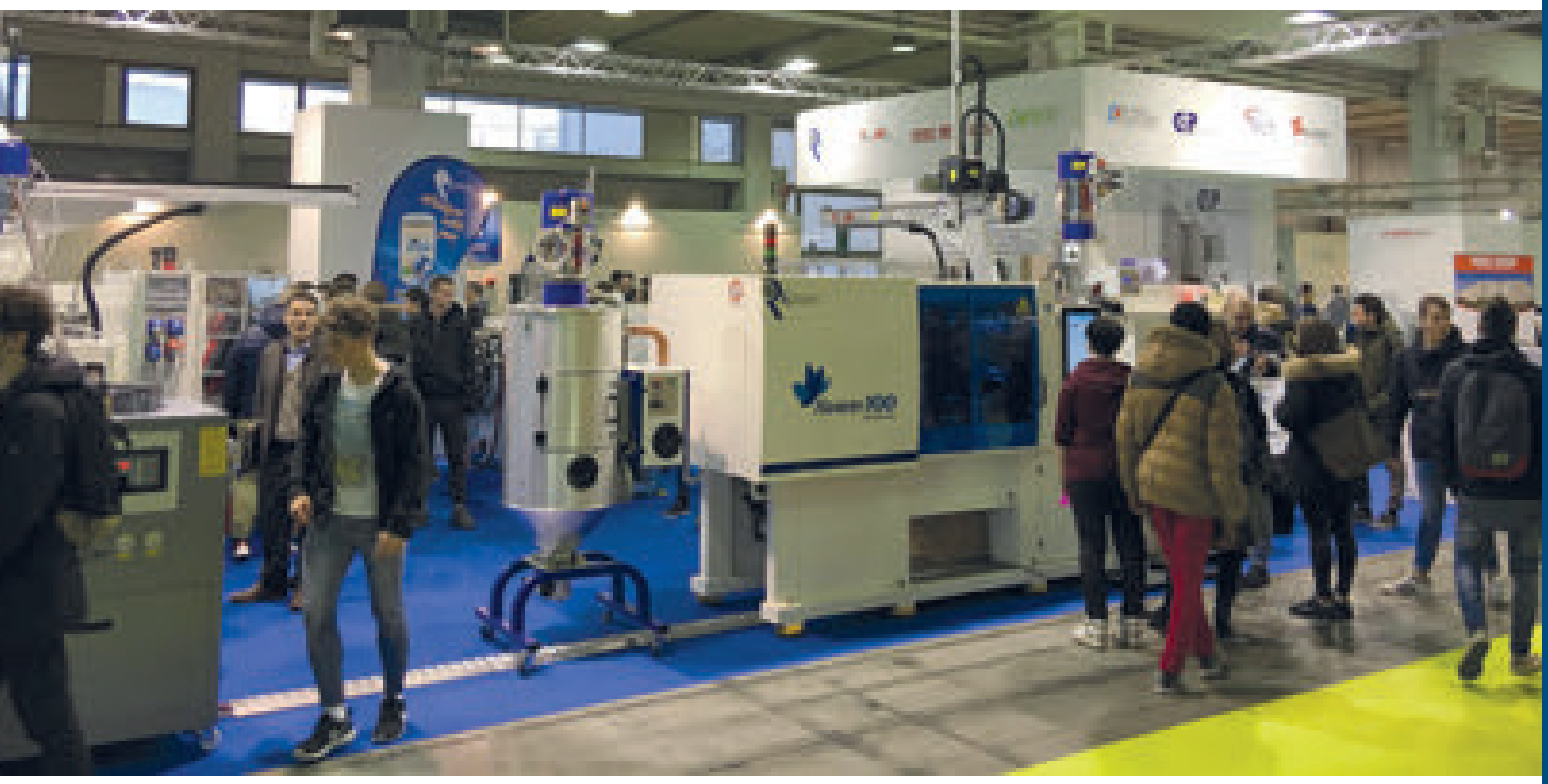


RIPRESS: FROM MACHINE RECONDITIONER TO MACHINE MANUFACTURER

WHEN DNA MATTERS

THERE CAN BE NO ARGUING WITH THE FACT THAT IT IS ALWAYS IMPORTANT TO DO YOUR "APPRENTICESHIP" AND GAIN THE NECESSARY EXPERIENCE, AND THE TRUTH OF THIS IS CERTAINLY BORNE OUT BY THE EXPERIENCE OF THIS LOMBARDY-BASED COMPANY, WHICH STARTED OUT AS A MACHINE RECONDITIONING SHOP, BEFORE EVOLVING INTO A VERSATILE SERVICE CENTRE AND SUBSEQUENTLY INTO A MACHINE MANUFACTURER OFFERING PRODUCTS WITH AN ATTRACTIVE PRICE/QUALITY RATIO

BY **ANGELO GRASSI** AND **RICCARDO AMPOLLINI**

"In the wake of a satisfying 2015 we are now doing what we have always done: investing our returns back into the company in order to promote greater organisational efficiency, and also to strengthen our R&D activity, with a view, primarily, to further reducing our machines' electricity consumption". Salvatore Lisciandrello, CEO of Ripress (stand A03, hall 15, at K 2016), is quick to point out that "this latter objective is one we were addressing even before this became a topical issue". And it is no coincidence energy saving is the very topic with which we open this piece on the Lombardy-based company Ripress.

FOCUS ON HYBRID ENERGY SAVING

This particular "concept" of energy saving, perhaps better known to sector operators by the acronym HES (Hybrid Energy Saving), was developed by Ripress technicians around a decade ago. It is a "hydraulic hybrid" technology whose secret lies in its IPM (Interior Permanent Magnet) electric motor, built with a neodymium magnet (neodymium being a material whose ferromagnetic power is higher than that of the ferrite used in classic asynchronous motors). The use of neodymium, in combination with other factors, namely the particular shape of the IPM motor, in addition to the normal force produced by the electromagnetic torque, makes it possible to exploit an additional force created by a repulsion pair of the N/S poles.

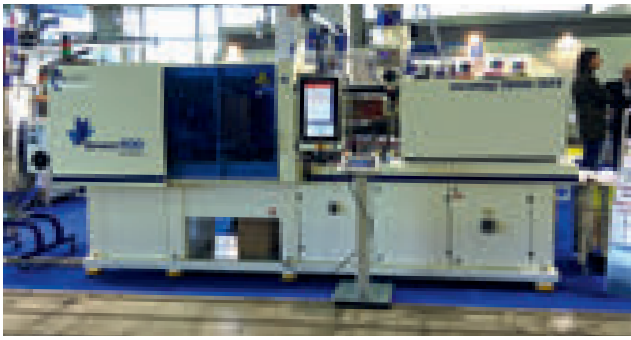
IPM electric motors are also smaller and light-

Antonio Pagano (on the left), managing partner, photographed with Salvatore Lisciandrello, CEO of Ripress

IT 130 XL HES (hybrid energy saving) injection moulding machine

er than traditional ones and they are characterized by low inertia, which allows excellent performances even at low rpm rates, when it is normally more difficult to achieve vertical ramps due to the magnitudes of the parameters P (pressure) and Q (flow). The Ripress engineers have also combined the IPM motor with an AC-AC (alternating current) drive and high-performance gear pump, thus obtaining, through these features, the system dubbed HES.

"The advantages of HES technology are remarkable", says Lisciandrello. "First of all, going by measurements carried out at our customers' facilities, it offers savings of between 30% and 70% compared with a conventional propulsion system, depending, of course, on the application in question. Added to this, it offers maximum repeatability and reliability of the required P and Q values; fine control of these same parameters, which can be set from the main computer; very rapid dynamics and speed of intervention; circuit simplification of the hydraulic system; minimum pump reaction times; and a reduction of the amount of oil used, and therefore a lower oil temperature".



Fully electric Flower 100 (Euromap 100/322), with Dipre granulator (Main Tech) and TecnoMatic micro cnc handling equipment

All these strengths underline the extent to which the HES hybrid system, by simplifying the traditional hydraulic circuit and dynamics, previously entrusted to a variable flow pump, has revolutionized the philosophy of standard oil-based hydraulic applications. It follows that the HES hybrid system is most advantageous during the machine cycle phases in which there are no changes in the magnitude of P and Q, such as in the maintenance and/or pressure compensation phase, during which, indeed, the net power consumption tends to be null. We can therefore say that, though the HES hybrid system, which can be implemented in a modular fashion on all the IT series machines, including the XL version, Ripress has incorporated the "state of the art" in hydraulic technology into these machines.

HES AND THE IT AND IT XL MACHINES: A GREAT COMBINATION

Designed with clamping forces ranging from 90 to 1300 tons, Ripress's IT range of toggle-joint presses comprises injection machines offering advanced HES technology at competitive prices. It is important to remember that the concept of close relations with the customer is something that is written into Ripress's DNA, given that the company was initially born, more than 30 years ago, as a machine reconditioning shop, and only later evolved into a highly versatile technical assistance "service". The machines making up the IT series were subsequently at the heart of the company's next transition, when it became an actual manufacturer of injection moulding machines. Briefly, the IT series machines offer the following main features:

- an Italian designed and Italian built microprocessor, with data setting via a touchscreen display; and an industrial embedded Linux computer;
- USB connection for backup of moulding "recipes" and data;
- Ethernet sockets for network connection;
- magnetostrictive position transducers connected to a Controller Area Network (CANbus) system, for transmitting, to the PC, all information on the speed and position of the axes.

Basically, compared with the classic IT series, the XL is characterized by a greater distance between the tie bars, and it was created to satisfy the section of the market wanting even more flexibility and versatility from the IT series machines.

THE FLOWER SERIES

Another strong point of this company is, without doubt, its Flower series of fully electric injection moulding machines, which guarantee energy savings and a lower environmental impact. Flower, which was born after the IT series, is a project that, once again, stemmed from the desire to develop a product guaranteeing good performance but not requiring a costly investment. First previewed at K 2013 as a 100-ton model, the series now includes 150- and 230-ton versions.

All three versions feature plasticizing screws with an L/D ratio of 20, and an injection rate of 300 mm/s; they have an opening stroke of 280, 440 and 550 mm, and a distance between the tie bars of 460x460 mm, 520x520 mm and 620x620 mm, respectively. As regards the components, the technicians at Ripress felt that the entire range should be fitted with Japanese NSK screws, while the electronic system is produced by Beckhoff. ■

www.ripress.it

A special application

A raised base for tray moulding

Even though it has not been shown by the manufacturer at recent trade fairs, there is no doubt that the application here described had clearly "taken shape" in Salvatore Lisciandrello's mind from the start. "In 2015 we created some special injection moulding machines with the aim of entering new manufacturing settings. As part of this drive, we created an ad hoc working cell for the moulding of fruit trays – the kind you see every day in supermarkets and greengrocers' shops", explained Ripress CEO.

"The configuration of the cell is based primarily on a 580-ton injection moulding machine that, thanks to a special raised base, allows the manufactured articles to be unloaded from the bottom. This special machine is now in operation at the premises of an Italian producer who wanted to put us to the test, so to speak. Indeed this manufacturer previously used a machine of another brand that, in our view (subsequently confirmed by the facts), not only had a higher initial cost, but also led to excessive energy consumption".

"Indeed, using the Ripress machine, this moulder is now using 60% less electricity than it was doing using the previous solution", Lisciandrello concluded. ■

Thanks to the raised base, the manufactured articles can be unloaded from the bottom of this 580-ton injection moulding machine

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K 2016: ARBURG HAS IT ALL

ALLROUNDERS, FREEFORMERS, INDUSTRY 4.0 AND PLENTY MORE

"Anyone who is familiar with Arburg knows that you can always rely on us to produce a surprise and that we like to keep an ace up our sleeve. Things are no different in this important K year", says Michael Hehl, managing partner and spokesperson for the Arburg management team with a wink, adding: "The electric Allrounder Golden Electric entry level machine series made its debut in March. This was the first product innovation for this year, but by no means the last. Anyone who wants to find out what is driving the industry and how plastic processing will become even more efficient in the future is invited to visit our exhibition stand. We are presenting several innovations and trends to international trade visitors - in injection moulding as well as additive manufacturing and Industry 4.0".

SMART: INDUSTRY 4.0 FOR PRODUCTS AND PRODUCTION

Innovative machine manufacturers like Arburg are rebranding themselves as suppliers of flexible production systems for IT-networked production in the "smart factory". At the K 2016, an innovative ap-

A TOTAL OF 27 ARBURG MACHINES ARE ON SHOW AT THE LEADING INTERNATIONAL "K" TRADE FAIR, PRESENTING INNOVATIVE APPLICATIONS, PROCESSES AND TURNKEY SOLUTIONS FOR THE EFFICIENT PRODUCTION OF PLASTIC PARTS - FROM SINGLE-UNIT TO HIGH-VOLUME BATCHES. ON ITS OWN EXHIBITION STAND (A13, HALL 13) ARBURG PRESENTS TWELVE EXHIBITS THAT DEMONSTRATE THE CURRENT STATE OF THE ART, INCLUDING SEVERAL WORLD FIRSTS. VISITORS HAVE THE OPPORTUNITY TO EXPERIENCE FOR THEMSELVES THE LATEST TRENDS IN PRODUCTION EFFICIENCY, LIGHTWEIGHT CONSTRUCTION AND INDUSTRY 4.0, AS WELL AS SPECIAL INDUSTRY-SPECIFIC SOLUTIONS, E.G. FOR THE PACKAGING AND MEDICAL TECHNOLOGY SECTORS

plication is on show, which comprises a vertical Allrounder 375 V, a Freeformer and an automation solution. Furthermore, the visitors to stand A13 are able to find out about future opportunities and Arburg solutions at a central information point. They learn about how Arburg implements the topics of Industry 4.0 and the "smart factory" in its products and what practical examples are of relevance for plastic part production.

ENTRY-LEVEL GOLDEN ELECTRIC MACHINE SERIES

The injection moulding machines from the Golden Electric series launched in March 2016 have been met with a great reception throughout the world. They feature proven, high-quality Arburg technology "made in Germany" at an attractive price/performance ratio. This is made possible through standardised components, such as a fixed combination of distance between tie-bars, clamping force and injection unit size. The entry-level Golden Electric series is available in four sizes, 370, 470, 520 and 570, with clamping forces from 600 to 2,000 kN. At the K 2016, an Allrounder 470 E Golden Electric with a clamping force of 1,000 kN and a size 290 injection unit are used to produce a technical part.

LIGHTWEIGHT CONSTRUCTION, SILICONE AND HIGH-SPEED MACHINES

Profoam is one of the innovative processes that Arburg promotes for the efficient production of lightweight yet strong components from plastic. The physical foaming technique, which enables low-distortion parts with a homogeneous foam structure to be produced using conventional injection moulding machines, is shown at the K 2016 on the basis of an automotive application. Dynamic mould temperature control is used to produce a high-gloss surface.

For the industrial additive manufacturing of plastic parts, Arburg presents the Freeformer, which supplements its machine range to cover individualised one-off parts, prototypes and small-volume batches

An electric Allrounder 470 A in clean room version

Innovative cube mould technology specially designed for the packaging industry is presented in a world premiere. A further complex application is the two-component injection moulding of a wristwatch from two different liquid silicones (LSR), including assembly of the watch casing. Another highlight is a high-speed application for medical technology, in which a clean room version of an electric Allrounder 470 A is used.

AUTOMATION: FROM PICKERS TO TURNKEY SYSTEMS

Automation is used to integrate a growing number of increasingly complex operations to increase added value around the injection moulding process. In addition to injection machines, Arburg, as a supplier of production systems, offers a wide range of automation-related products from a single source. The majority of exhibits in Düsseldorf are equipped with robotic systems. These cover everything, from simple pickers to six-axis robots featuring the Selogica user interface and complex turnkey systems. A new product is also on show in the area of linear Multilift robotic systems.

ADDITIVE MANUFACTURING WITH THE FREEFORMER

For the industrial additive manufacturing of plastic parts, Arburg presents the Freeformer, which supplements its machine range to cover individualised one-off parts, prototypes and small-volume batches. With Arburg Plastic Freeforming (APF), functional plastic parts can be built up layer-by-layer on the basis of 3D CAD data. One of the key benefits of the

"We have a number of pioneering innovations and visionary technology concepts up our sleeve for the K 2016 international show", explains Michael Hehl, managing partner and spokesperson for the Arburg management team

Freeformer over conventional processes is the fact that the system can process qualified low-cost plastic granulates, as also used in injection moulding. These include PA, ABS, PC and TPU, as well as blends of these materials with special properties. The company will continue to develop the Freeformer and Arburg Plastic Freeforming (APF) on an ongoing and practical basis. The focus is on points such as the qualification of more materials and process stability. The Freeformer now features, for example, an optimised build chamber with improved air and temperature control. A material dryer is also optionally available, which is integrated in the machine control system. Arburg have also significantly extended the maintenance intervals for the discharge system. New applications, materials and parts are presented on a total of three Freeformers at the K 2016.

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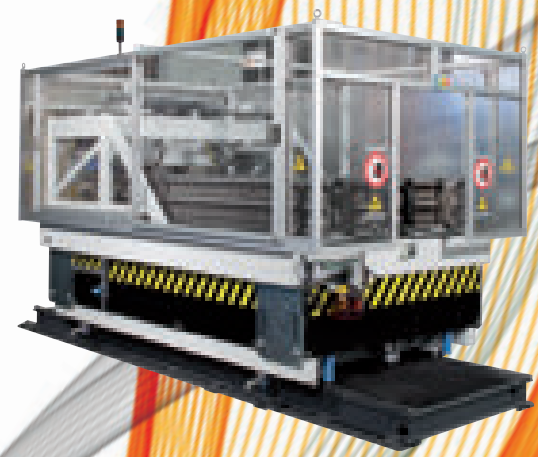

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BFM, ONE OF THE MAIN MANUFACTURERS OF BAG-MAKING AND PRINTING MACHINES, IS GLAD TO INTRODUCE SIRIO AT K 2016. THE COMPANY, ON THE PLASTICS SCENE SINCE 1975, IS ALSO TAKING THE OPPORTUNITY TO PRESENT NOVELTIES IN THE FIELD OF BAG-MAKING MACHINES

MACHINES DESTINED FOR TWO FIELDS OF PROCESSING

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In the plastic sector since 1975, BFM is today one of the main Italian manufacturers of automatic bag-making and flexo-printing machines, both with "CI" central drum, up to 10 colours, or stack type, up to 8 colours, reel-to-reel or in line with the extrusion and/or bag-making machines. For the company, it is important and decisive the partnership with Bandera, one of the main global manufacturers of extrusion lines, for which BFM realizes rotating take-offs and automatic winders.

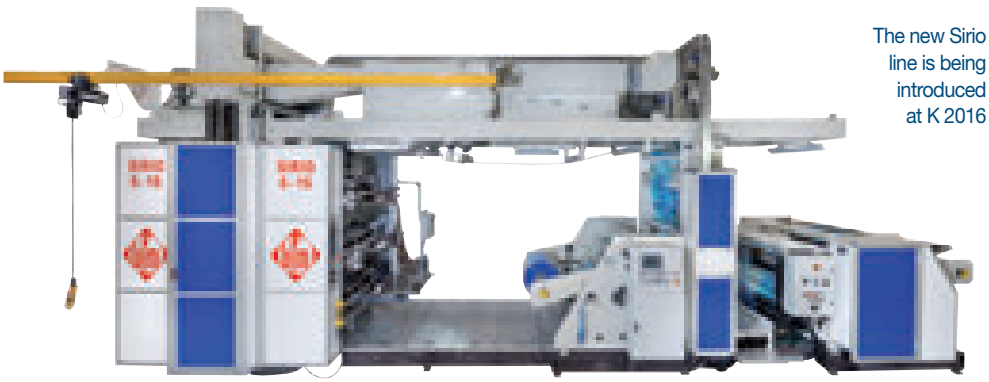
NEW FLEXO-PRINTING MACHINE

In recent years, BFM's machines have all undergone important technological upgrades and, at K 2016 (hall 17, booth C05), in Düsseldorf, the new Sirio flexo-printing machine is being introduced.

It is a 6-colour stack type printing machine, designed for a wide range of plastic materials but suitable for some paper materials as well. The machine can be used in line with the extruder or in reel-to-reel mode.

The printing groups, placed horizontally, are provided with closed chamber, "doctor blade", with self-alignment option. The printing length ranges from 300 to 1,200 mm with widths of 800, 1,000, 1,200, 1,400, and 1,600 mm; by changing the web paths, it is possible to print both sides: 6+0, 5+1, 4+2, 3+3.

The unwinding unit is provided with hydraulic loader for reels and motorized tension control. Each printing group is equipped with motorized printing cylinder, electrical ink grinding, and pneumatic ink-



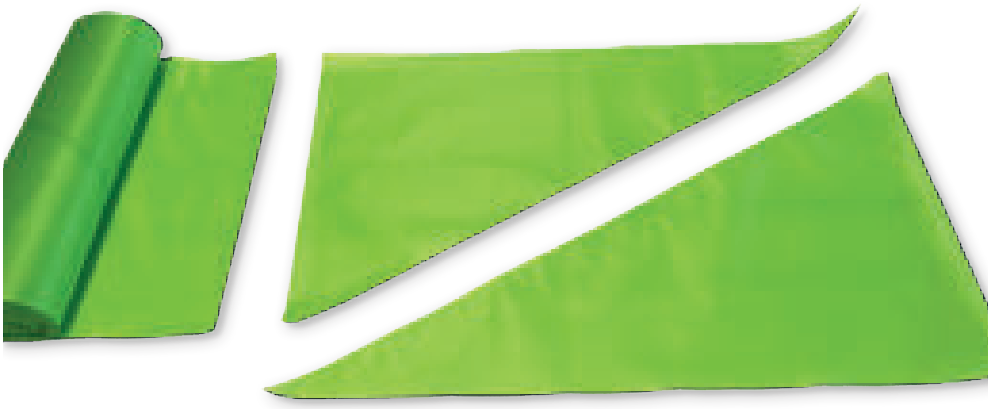
The new Sirio line is being introduced at K 2016

ing. The drying system includes both intercolour fans and drying tunnel, with electrical or gas heating. The nip roll section features an independent motor and chilled rollers. The winder is motorized and provided with hydraulic unloader for reels.
The machine transmission and automation have been designed with the support of Bosch Rexroth, in order to optimize mechanical sizing, to keep construction simple, and to speed up production changes. All printing groups, as well as the unwinder/rewinder unit, are equipped with MBT torque motors from Bosch Rexroth, which can work with high torque and reduced ripple. This has resulted in significant kinematic reduction, leading to cost efficiency, improved performances, easier maintenance and, above all, higher printing precision, thanks to the IndraDrive digital drives.

BAG MAKING MACHINES

As for bag-making machines, a new line is also being introduced for the production of "sac-à-pouche" (on roll), triangular-shaped very elastic pastry bags made by a special 3-layer coextruded material, with thickness from 90 to 100 micron.
The production process starts with a tubular reel. After a double nip-roll to control the tension of the reel, a station for inclined precutting and sealing is placed on the accessory section of the machine and a transversal cold precutting unit is installed in the main machine section. The collection of the sac-a-poches is carried out by a mini-roll device, winding up the 100-200 bag rolls. Finally, the rolls are placed in a conveyor belt. The production output is approximately of 100 bags per minute.
Apart from the BM180 base model, also used for other applications (e.g. soft handle bags, patch handle bags etc.), all accessories have been designed according to customers' requirements. ■

www.bfm.it



The new BFM bag-making machine is able to produce up to 100 "sac-à-pouche" per minute

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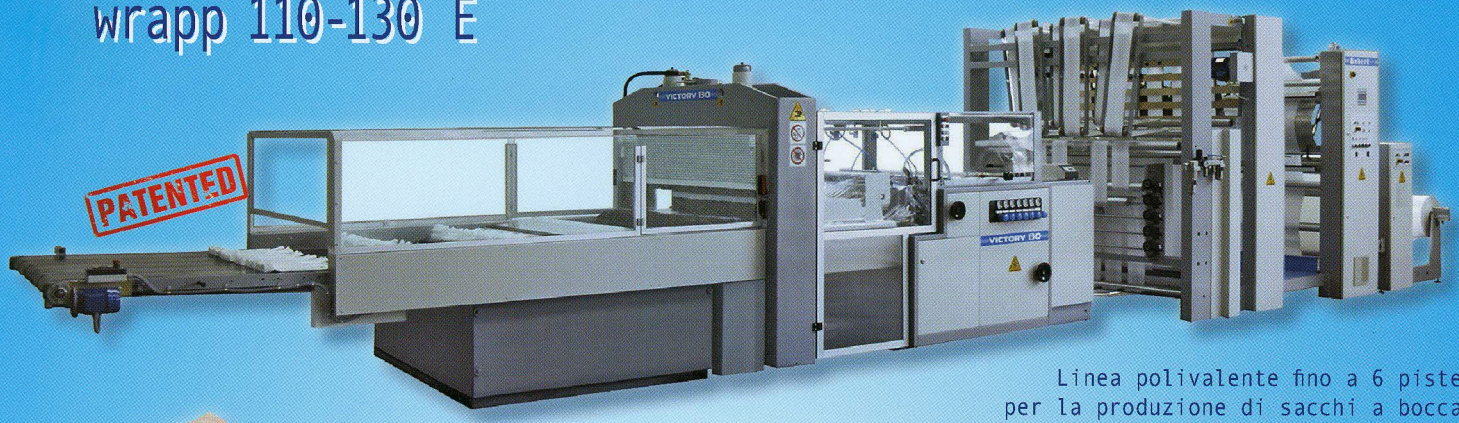


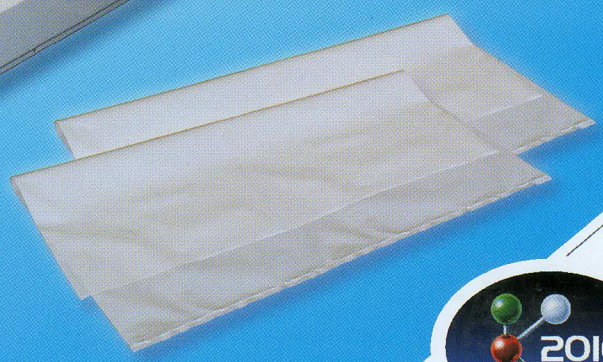
Linea polivalente fino a 6 piste
per la produzione di sacchi a bocca
aperta, shopper o block notes a strappo.
Velocità fino a 300 cicli/min

specialist in biodegradable film

serie series

gamma 160-200

Linea per la produzione di sacchi a bocca aperta
raccolti in mazzette senza spilli.
Larghezza fino a 2mt e lunghezza fino a 4mt.



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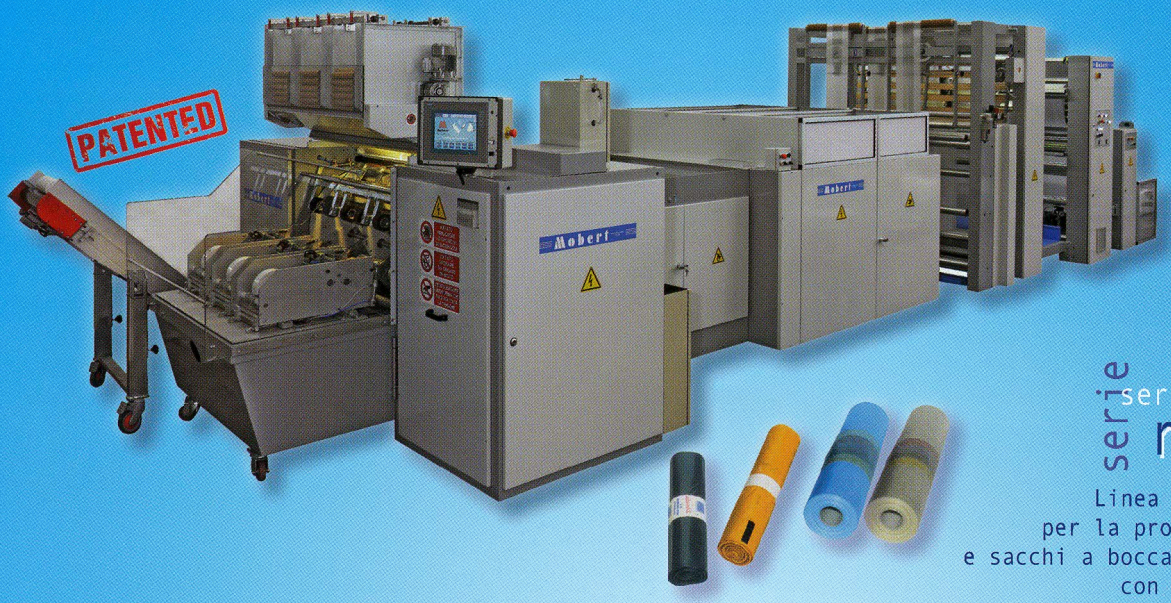

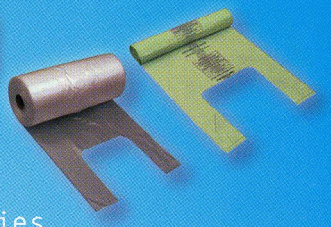

serie series

roller SHP 110

Linea polivalente a 2/3/4 piste
per la produzione di sacchi shopper
e sacchi a bocca aperta avvolti in rotoli
con o senza anima di cartone.

serie series

nastrosac 130 DUO

Linea a due piste per la produzione
di sacchi a bocca aperta
con nastrino di chiusura a stringa.
Velocità fino a 150mt/min

Nuovo brevetto
per
rotolo compatto

serie series

Roller 2M ECO 110-130

Linea fino a 6 piste per la produzione
di sacchi a bocca aperta pretagliati
avvolti in rotolo su anima di cartone.
Velocità 300 cicli/min.

TO DEVELOP TECHNOLOGIES ABLE TO REDUCE THE PRODUCTION COSTS OF THE ROTATIONAL MOULDING PROCESS, ROTOMACHINERY GROUP STEADILY INVESTS IN RESEARCH AND DEVELOPMENT ALSO IN DIFFICULT TIME. MAJOR RESULTS WERE RECENTLY ACHIEVED IN THIS CONTEXT

ADVANCED TECHNOLOGIES

REDUCING PRODUCTION COSTS IN THE ROTATIONAL MOULDING

As everyone knows, over the past few years we have experienced a quite difficult market, one where the general market is very slow and we haven't yet seen the expected growth in the European market or other areas of the world where manufacturers are technologically advanced and sensitive to innovation. However, even in more advanced markets, new competitors are offering low-technology and low-quality equipment utilizing a "reduced price" as their principal marketing instrument.

Even in this difficult situation, Rotomachinery Group (hall 9, booth C22) has continued to invest in research and development because, especially in the industry's more advanced markets, there is a need to reduce production costs and improve product quality.

CUTTING ON MANPOWER COSTS

Through Rotomachinery Group's investment in research and development, good results have been achieved in all areas of intervention. The reduction of manpower costs means cutting the number of working hours for each machine, however this requires increased attention to the construction of the machine in order to ensure the resources necessary for producing professional, high-quality products. The company is not only providing rotomoulding machines but also personal solutions to make production more efficient in terms of working with the moulds; drawing of the production site; solutions to move and use raw materials; and ensuring the production of high-quality finished rotomoulded products.

Recently, a new software system resident has been deployed on the company's servers that considers the weight of the parts and easy comprehension of mould positioning on the spiders of straight arms and on the flange of offset arms to keep the weight balanced. Using a PC in the

A recent plant by Rotomachinery Group

An aerial view of the Rotomachinery Group factory in Cerano (Novara, Italy)

office, the head of production can move the moulds with a click of the mouse and the program will show in real time any unbalanced point and propose the positioning and placement of the weight. All of this takes place without interfering with production. This technology includes high advantages in terms of mechanical stresses and life of the components.

The user can remotely check the production using a PC, tablet, or smart phone and see on the screen the same pages of the touch panel on the machine. As a result one person can control multiple machines without being present.

SAVING ENERGY

As regards energy savings, Rotomachinery Group offers machines allowing, for the same cycle time, a reduction in consumption of 20% through the quality of the insulation and the shape of the cooking chamber, considering the speed and the pressure of the airflow of the hot air on the moulds. Such significant reduction in cycle times are achieved with the same consumption rates.

Moving a further step ahead, the company has now developed the UFD (Upper Fan Duct) system, which directs some of the hot air onto the moulds. This is an extra hot air pipe that uses the same heat source without increasing consumption. The new hot air blowing fans, composed of two turbines, reach the optimal rotation in rapid time and also in fast time reducing speed and the loss of hot air during the opening and closing of the oven doors. This provides maximum advantage in combination with the Ecomode system where the burner stops when the doors of the oven are opened and the exhaust works at the minimum power.

Another innovation, Regen utilizes energy lost from the machine and uses it again for the machine or for other external needs. With Regen, moulders are able to re-use the energy lost from the inverters every time the motors reduce the speed and make reverse rotations. The company is also studying special heat exchangers, air-air and/or air-water, to enable moving hot air coming from the exhaust to use it to heat the factory.

INTEGRATED SOFTWARE

All these functions are controlled through a software system that monitors the internal temperature of the moulds during the heating and cooling phase. It will direct the exit of the arm from the oven when the part is perfectly processed and it will stop the cooling cycle when the part reaches the desired temperature. These innovations are important in the event of material changes, changes in product weights, testing of new moulds, or for the initial startup of production each morning because cycle changes are affected by different conditions.

The reduction of the cycle times depends on a better cooling phase. This goal was reached by using new types of cooling fans, which are more powerful (28,000 up to 55,000 m^3/h each), less noisy, and cut electrical consumption by half. The savings achieved are real and our clients can look at this in real time on the touch screen of the machine. The electrical and gas consumption can be set for each working cycle, cubic meters, weight of the products, and with a certain time frame.

www.rotomachinery.com

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NEWS

Blow moulding

Two fully electric machines at K 2016

The Italian machinery manufacturer Meccanoplastica (hall 14, booth B18) is taking two completely electric machines to K 2016: the single-station HL 750/S for continuous extrusion blow moulding, and the single cavity MIPET-1GM for the stretch blow moulding of PET preforms.
The first, designed to produce containers with capacities of up to 30 litres, features a clamping force of 30 tons and a 750 mm horizontal stroke of the mould carriage. The HL 750/S stands out for its electromechanical mould clamping system, which is driven by a brushless motor, and for its hydraulic bearing with 2.2 kW motor multiplying the clamping force. Added to this, it offers the possibility of recovering the electrical energy in the motor braking phases of the moving mechanical parts (mould and mould carriage).
The machine that is on display at the fair features a one-way extruder head and single-cavity mould for producing, at an output rate of 80-85 units per hour, PE jerry cans of average molecular weight with a capacity of 20 litres and a weight of around 800 g.
The MIPET-1GM is designed to meet the flexibility needs of processors as it is able to produce PET containers with capacities of up to 10 litres, in the single-cavity mould configuration, and containers with capacities of up to 2 litres in the two-cavity configuration with a centre distance of 130 mm. This machine is notable for its holding pressure (10 bar) equal to 450 kg, maximum mould opening stroke of 210 mm, and high cycle rates, attributable to the immediate feedback of the fully-electric command system. This machine is manufactured at the Barcelona facilities and is an absolute first for Meccanoplastica.
At the fair it is set up with one- and two-cavity moulds to produce PET preforms for bottles having a capacity of 500 ml and weighing 30 g, with a round and square base respectively, at an hourly output rate of 2000 bottles (with the 2-cavity mould).
www.meccanoplastica.com

MIPET-1GM electric machine for the stretch blow moulding of PET preforms

Presma rotary presses

Effective moulding with the multi-station feature

The Presma booth C57, hall 15, at K 2016 is dedicated to the "rotary" presses, which are multi-station solutions destined to the injection moulding of thermoplastic foam and thermosetting rubber. It will be exhibiting two models: the Roto T4/48 XL and the Roto R 12.
The first is an example of the range of special rotary machines for the processing of thermoplastic foam and has been specifically developed for the production of bottle caps. This machines is fitted with 48+48 double-cavity mould platens and four injector units, which makes it possible to produce 4 different cap models in 4 different colours/materials.
In the "transfer" injection unit the plasticisation screw and the plunger are respectively operated by an inverter controlled electric motor and a hydraulic piston. The "Roto Logic" control elements developed in-house by Presma, makes it possible to set different metering quantities for one or more single-cavity moulds, and to therefore produce various kinds of caps for each unit, and to test one or more moulds for caps of various shape and weight. There is a touchscreen interface for the monitoring and management of all moulding parameters, thanks to a series of sensors and alarms with cycle resetting in the case of a blockage.

At the fair, the Roto R model is exhibited in operation fitted with a mould for o-rings

This press range has been developed in order to assure the maximum production flexibility and the model displayed features an automated systems which makes it possible to use the different injection units for the automatic production of two-colour caps. While the Roto R 12 machine has been conceived for rubber moulding in a more efficient manner as compared to the traditional single-mould press. It can make use of twelve different moulds and so the press can assure an assorted production, even using two different blends in the case of the dual injection unit version. Furthermore in the event of the use of expensive blends, the use of small-size moulds and cavities means that it is possible to improve the quality of the items produced and to reduce the amount of waste in the form of flash and sprue.
The vulcanization times differ from blend to blend, and can be optimized without wasting any time thanks to the 10 rotation cycles before the opening and demoulding steps. The press is equipped with drives that guarantee rapid cycles starting from under 5 seconds and injection optimization is guaranteed by a volume-type filling system with hydraulic or electrical drive. During the K the machines will be moulding o-rings of various sizes.
www.presma.it

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NEWS

Friul Filiere at the K show

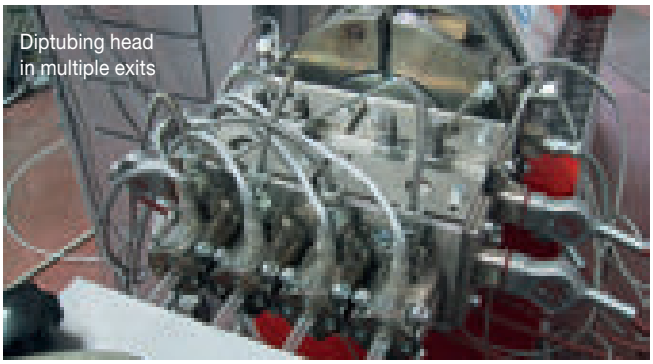
Usual quality, future technology

Lots of new ideas and innovations are introduced by Friul Filiere (hall 16, booth D72) to its customers and the international visitors of the K show.

At its booth, the company shows products representative of its history and tradition, upgraded and, more than ever before, highly energy-efficient: a single-screw extruder Omega 60 and a conical twin-screw R63 fitted with dedicated dies and special profiles. Such products, complete with extruders, lines and dies, are the outcome of just some of the recent projects the company has realized. In fact, the entire range clearly demonstrates complete dedication to technical innovation and R&D, with the aim of always being at the forefront of innovation. Three appointments are scheduled each day at the Friul Filiere booth in order to allow visitors to see the machines running and watch "live" extrusion tests. Appointments not to miss if processors and visitors truly want to find out the latest as far as innovation is concerned, that is, what the company will leave as its mark in this edition of K.

The milestone of the company's production range is wearing, for this exhibition, a new suit. Reliable, loved by Friul Filiere's customers thanks to its flexibility, modern, updated in its technical characteristics, even more functional as special attention has been given to details, ideal for the management and control of the production process, even in case of complex profiles.

The entire series of Omega coextruders has been upgraded, with a focus on energy saving and functionality, offering a simplified handling system, designed to allow an easier connection to the main extrusion lines. The series is now perfect to cater for the most demanding productive and flexibility requirements of processors.


Diptubing head in multiple exits

The new teleassistance service allows Friul Filiere to remotely intervene in real time on the customer's machines worldwide.

Friul Filiere introduces, for the first time ever, a patented technology dedicated to the pipe world. Who would have thought that just a simple gesture, made during the demonstrations at the show, could have the effect of making production so much easier, rapid, precise, and economical. Because the customer saves time, and, we all know, time is money. ■

www.friulfiliere.it

Compression press for UHMWPE

Processing ultra-high molecular weight polymers

A company based in Vigevano (near Pavia), Saspol (booth A84, hall 13 at K 2016) has recently developed three machines, including a compression press for the processing of UHMWPE, a polyethylene material for specific uses featuring ultra-high molecular weight. The machine has a specific pressure of 40 kg/cm², a clamping force of 3,600 tons and moulds of 2,100 x 4,200 mm.

Ultra-high molecular weight polyethylene is used for example in the medical field for the production of the acetabular cup for hip and knee replacements, which is often coupled with a metallic material such as cobalt or titanium alloys. Another important use is in the running surfaces of skis and snowboards, as it provides excellent sliding potential thanks to the physical-mechanical properties of the material.

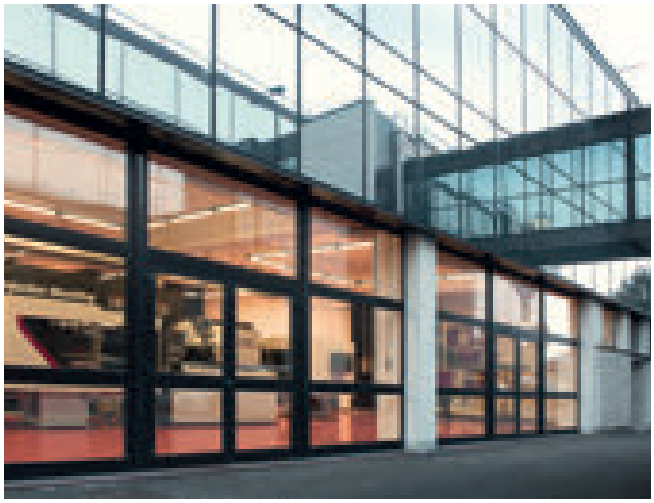

One of the Saspol fields of specialization is the construction of presses for the processing of ultra-high molecular weight polyethylene

In more general terms, UHMWPE is a special non-fluid polymer, with technical features similar to those of metals. It has an atomic mass of 3-6 MDa (Mega Dalton) and if woven to 5% in a naphtalene or decalin bath it produces a fibre whose trade name is DSM Dyneema, with crystalline content of 85% and a density of 0.97 g/cm².

This super fibre is used for special applications such as for bullet-proof vests, as well as sails and ropes in the nautical field and it is twice as resistant as Kevlar and 15 times more than steel at the same weight. Although it is a linear polymer, with a moderate crystalline content (45-60%) and it can even be less than that of LDPE (50-60%). The reason being that UHMWPE in a fluid state is extremely viscous and there is therefore no limits to its orderly arrangement. ■ www.saspol.it

At the Negri Bossi booth

For seventy years towards the future



The Italian company Negri Bossi starts at K 2016 the celebration of its seventy years in the manufacturing of injection moulding machines

At K 2016 Negri Bossi (hall 15, booth B22) starts the yearlong celebration of its 70th anniversary in the manufacture of injection moulding machinery. The booth tips its hat to the past whilst presenting ideas, developments and innovations that will help shape its future in the market of injection moulding.

The fourth generation of the all electric machine EleNB is introduced for the first time at the booth. With both improved technical specification and performance this completely new product is designed to have a wider appeal in areas such as packaging and medical. The machine is equipped with the new Tactum multi-touch controller with features such as remote access, in built camera and "gesture navigation" thanks to the introduction of the multi-touch device.

The machine also features its new "smart flex 2" locking unit with a different toggle geometry designed to be coupled specifically with electric closing and to have characteristics optimised to its target market. The range now includes 7 models from 80 to 350 tons which will be extended to 11 models from 50 to 650 tons by the end of the 2017 first quarter.

At the show also two new clamp units belonging to the X series are displayed: an 850 and a 720 respectively with hydraulic and electric actuation. The new clamp units are designed to have all the positive characteristics of a toggle whilst competing with two platen units in terms of footprint and cleanliness. The 850 unit is shown as a complete machine, which highlights certain concepts and technologies that the Italian manufacturer will release on the future models.

Negri Bossi already at the forefront in controller technology with both the Tactus (single touch) and Tactum (multi touch) devices, also gives visitors a glimpse into the future of how new technology can be applied to make the interface more intuitive and easy informative.

www.negribossi.com

Omipa: over 50 years of experience

Extrusion lines for high quality hollow PP profiles

At K 2016, Omipa (hall 17, booth A42) arrives with a new energy, given by a market that is showing clear signs of economic recovery. One of the world leader for over 50 years in the design and construction of complete lines for the production of flat and corrugated sheets, foils, films and hollow profiles in various thermoplastic materials, Omipa is still a family business, carried on by the Cazzani family, synonymous with reliability and solidity.

This year the company manufactured ten extrusion lines for the production of PP hollow profiles in useful width from 1,200 to 2,600 mm and output from 400 to 850 kg/h, supplied to European and extra-European customers.

These lines include important innovation in the field of hollow profile extrusion such as:

- calibration plates, which, thanks to a new vacuum system, allow to obtain sheets with extremely smooth surface, particularly suitable for printing, even though the line is running at high speeds;

- capacity to produce high quality hollow profiles in PP by using up to 70% of reground material in flakes (not re-pelletized);

- take-off groups with driven rolls complete with automatic gap system adjustment between rolls are aimed at obtaining products with very low gram weights at high linear speed, over 14 meters per minute;

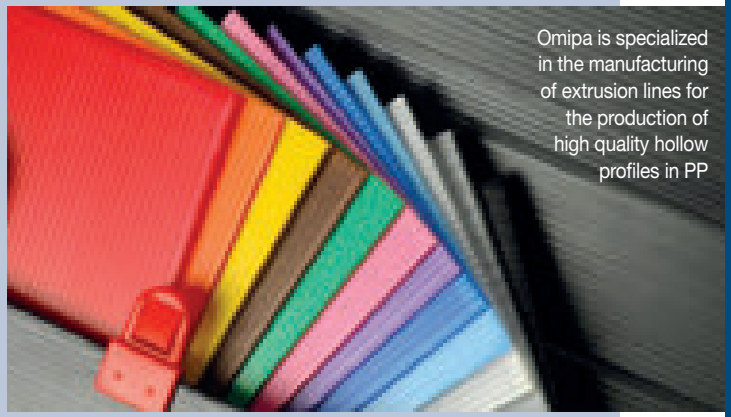
- longer conditioning ovens guarantee a perfect planarity of the sheet when the linear speed is very high.

Other important developments consists in the welding system of longitudinal edges and the system for the semi-automatic flexographic printing, both inline, as well as semi-automatic sheet stacking.

Last but not least, Omipa is one of the few companies in the world to supply dies for the production of hollow profiles in PP provided with deckle plates with a system of external and internal flow closure which guarantees no material leakage and excellent performances.

The company is confident that such kind of innovations will enable customers to further improve their productive performances and get high quality of the final product.

www.omipa.it



Omipa is specialized in the manufacturing of extrusion lines for the production of high quality hollow profiles in PP

NEWS

Ten years of Binova

A decade of achievements and recognition

Founded in 2006, Binova stands out from the crowd, taking advantage of many years of experience gained by its CEO, Luigi Maria Borzoni, and the associated company, Tecnova, in the field of plastic material extrusion.
The company's main strength has always been its capability to develop plants specifically studied to satisfy the customer's requirements. Flexibility and constant focus on innovation allowed Binova to compete with world-renowned competitors with consolidated structures.
The first big project that Binova faced dates back to 2008, when an important French company purchased a 4,000-kg/h recycling and compounding plant for polypropylene. The same customer, during the last ten years, has committed to Binova the revamping of an existing single-screw plant and the manufacture of other two lines for a 1,500-kg/h production. This is only one proof that, once a customer meets Binova, he does not simply find a plant manufacturer but a partner who is always available to develop the most suitable solutions to improve and enhance its production potentiality and the quality of the material produced.
Another strength of the company is the efficient after-sales service, offering customers rapid availability of spare parts in case of need and a focused technical assistance. In addition, all the plants manufactured in the last three years are equipped with an Ethernet connection that makes it possible to remote-control, and eventually correct, the productive process of the plant.
The most recent projects show the company's will and efforts made to understand and respond to market changes and new trends, offering increasingly advanced solutions.
An example is a pilot plant with a production capability from 1,200 to about 2,500 kg/h, developed for processing scraps of different MFI, of different nature and origin, such as high printed (up to 100%) and non-printed OPBOPP films, non-woven fabrics, geotextiles, fitted carpets, big bags, scraps coming from the injection and thermoforming industry etc.
The plant is installed and is being fine tuned by one of the most important Italian companies in this field. Created for compounding almost all polypropylene scraps, it is equipped with a corotating twin-screw extruder EBB112/48LD, fed by a compactor and a gravimetric dosing system. A volumetric pump integrates an automatic filtration system with a self-cleaning screen-changer. The final product is a pellet obtained by a "water ring" die face cutter. The plant was created to process, in one single step, materials having a maximum moisture up to 12% and mineral fillers up to 50%.
Another example is a plant for compounding scraps of polypropylene, polyethylene and polystyrene, with a production capability of 1,500 kg/h, equipped with corotating twin-screw extruder EBB92/44LD and compactor. It is installed at an important Spanish company that, after having considered any possible alternative available on the market, chose Binova as partner for its investment. The company was supported by an important research and development foundation, acting as a consultant and qualified in the analysis of products and processes and their technical and economical feasibility.
Binova celebrates its tenth year of activity being proud of having acquired an important order backlog, including an order for the manufacture of a recycling line for LDPE scraps coming from washing plant, equipped with corotating twin-screw extruder EBB135/48LD with double automatic filtration, integrated with two volumetric pumps, and some other projects under negotiation.

www.binovapm.it

In 2016, Binova celebrates 10 years of activity in the manufacturing of extrusion lines

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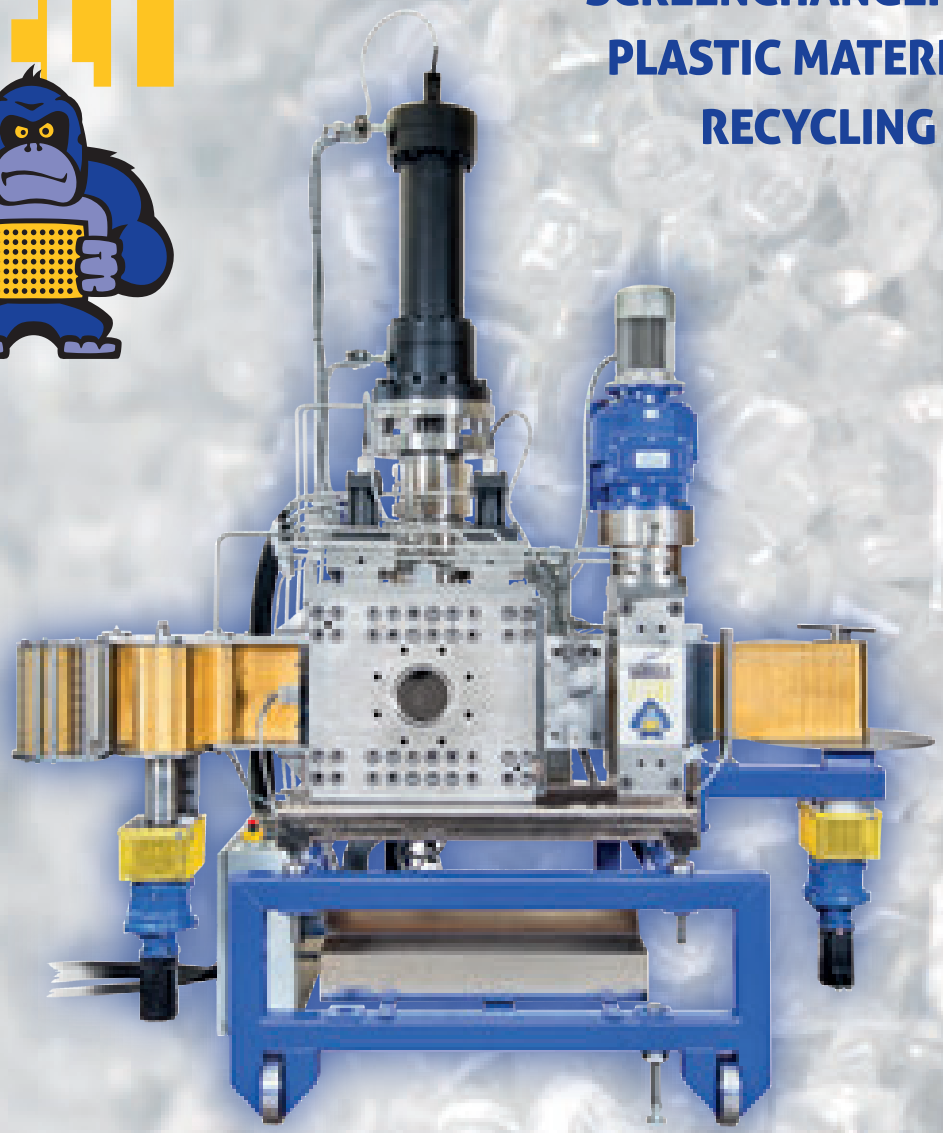

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NEWS

Extrusion line Omnia 1.0

The all-embracing choice for the future

The smart Omnia 1.0 extrusion line

Those who have known Baruffaldi (hall 17, booth C21, at K 2016) for years know it to be a record holder in building special machines for cutting, slotting and assembling plastic profiles. However, not everyone knows that Baruffaldi was set up more than 60 years ago as a manufacturer of tooling and machinery for the extrusion of various types of profiles.

At this moment in time, as we approach the most important trade fair in the industry, the company is focusing its attention on the extrusion line and is therefore proud to present a preview of the latest generation technological solutions, integrated in Omnia 1.0.

This new extrusion line is an important milestone in a story of excellence at international level. The firm, which has always focused on exports, established its market presence because its plants have been chosen over others in the most demanding markets, such as Germany and France.

The desire to meet customers' most stringent technical requirements has naturally had an effect on the way Omnia 1.0 has been conceived. The line has the same features as recent Baruffaldi-Primac plants, such as compact and robust design, ease of use and maintenance, and an operating system that can be tailored to end-users' requirements. It differs from the standard product for its innovative flexibility. Baruffaldi gives the customer freedom to decide how to "make up" his line. The project for each unit that is part of the line has been thoroughly studied so as to offer the best in productive capacity and the highest precision standards, whether it is the basic version or the full-optional version, complete with accessories and integrated modular units.

The range of choice is truly vast: from the energy-saving system on the calibration table to the waste material reduction offered by the patented guillotine cutting system; from the combined puller-cutter to the stand-alone units; from one type of traction and machine-movement management to another.

The benefits of having a single supplier for turnkey plants should not be underestimated and Baruffaldi-Primac makes it one of its points of strength. For technical profiles, for example, the company is able to offer the entire production line from the extruder to the palletizer, as well as offline machinery for special secondary machining operations. www.baruffaldi.eu

Sustainable processes

High efficiency and low power consumption

With a company tradition respectful of environment, Caccia Engineering (hall 11, booth B26) suggest all its machines with the Eco Friendly trademark, which identifies the continuous commitment of the Italian manufacturer in terms of environment sustainability with the development of high-efficiency and low energy consumption machines.

The achievement of such development consists in equipments with low operating costs due to low energy, air and gas consumptions and to the optimization of all mechanic and electric parts. Thanks to the aid of Sensorless-Vector inverters with Energy-Saving function, specific software, digital burners and advanced devices, operating savings from 30% (for turbo mixers) to 38% (for rotational ovens) are granted, compared to traditional solutions.

For all its machines the company has chosen to entrust the complete automation to last generation PLC combined with industrial IP65 PC without fan, with touch screen LCD and equipped with solid-state disks that grant maximum levels of flexibility and reliability with a free of charge remote assistance service. Easydrive V13 and SmartVision have been adopted as operator interface software respectively for rotational ovens and turbo mixers. Both are ergonomic and enhanced and it is possible to arrange the complete diagnostic of all devices.

Rotational ovens have been studied to improve their thermo-dynamic characteristics, removing the few thermal bridges. The Turbo Fan System (TFS) for the management of the main oven electro-fan has been improved, which allows an automatic capacity control and variable pressures inside the moulding chamber. The TFS even grants temperatures with real quick heating times. It comes out a decrease by 14%of the moulding times and, more in general, a reduction of the production costs.

A particular attention has been given to the containment of heat dispersion, both with the adoption of new containing gaskets and with the innovative Exhaust Gas Modulation (EGM) system, which allows modulating discharge fumes. Such system allows the scavenging of the single unburnt fumes (CO and NOx) that are continually present in each cycle steep, but without distorting the amount of hot air circulating. Special sensors and other safety devices keep the complete process continuously monitored, keeping optimal combustion parameters.

The EGM and TFS systems, together with the use of a digital burner, increase of an additional 8% the total efficiency of the combustion and heating equipment on the rotational ovens. The modern techniques for corpuscles analysis allowed optimizing the raw material vorticity flows, reducing cycle times. Both solutions together give a higher number of cycles/hour and a better quality of the final compound. www.cacciaeng.com

The Eco Friendly trademark identifies the continuous commitment of Caccia Engineering in terms of environment sustainability

STAR AUTOMATION

Your robot for injection moulding

Top of the class

HALL 11 - BOOTH G74

From the part to the box

New series XW-VI, to get only the best

- Fast
- Precise
- Reliable

new series XW-VI

Extract dry cycle: 0,57 sec
Full dry cycle: 3,58 sec

XW-600SVI Injection Press Range: 40~150 ton

Extract dry cycle: 0,90 sec
Full dry cycle: 4,90 sec

XW-1000SVI Injection Press Range: 75~350 ton

Extract dry cycle: 1,16 sec
Full dry cycle: 5,40 sec

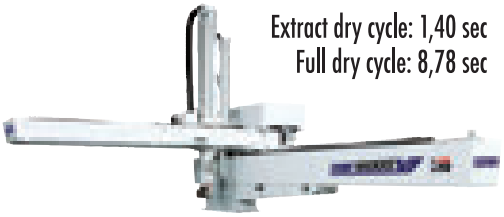
XW-1200SVI Injection Press Range: 200~650 ton

Extract dry cycle: 1,20 sec
Full dry cycle: 6,50 sec

XW-1400MVI Injection Press Range: 260~650 ton

Extract dry cycle: 1,68 sec
Full dry cycle: 7,80 sec

XW-1500SVI Injection Press Range: 450~1300 ton



Extract dry cycle: 1,40 sec
Full dry cycle: 8,78 sec

XW-1800MVI Injection Press Range: 850~1600 ton

STAR AUTOMATION

Via Salgari 2R/2S - 30030 Caselle di S. Maria di Sala - Venezia - Italy
tel. +39.041.5785311 - fax. +39.041.5785312 - sales@star-europe.com - www.star-europe.com

RUBBER MOULDING

Accessories for safety and productivity

At K 2016 Delia (hall 12, booth A05) proposes some fittings which, through their automatism, integrate the various rubber moulding process steps, from the press to the final product, and so are essential for a safer and higher productivity of rubber processing.
One is the robotized island that, by means of precise, fully automatic electrical and pneumatic movements, draws, trims and tits up also the injection peduncles of blow moulded by rubber injection press equipped with a Delia multi-nozzle thermo-regulated block injection mould.
A further proposal is the double thermoregulated block: a device that makes it possible to work simultaneously with two moulds on the same injection press: one on the fixed table side and the other one on the mobile table side. The compound is injected into the central point of the block, from which it flows into the various internal injection runners and then, through proper nozzles, flows into the corresponding mould cavities.
A third fitting is the robotized island for rubber/plastics caps production for the automotive cooling circuit. Also in this case the mechanical hand is used to draw, trim and fit up 64 rubber caps on the corresponding plastics inserts simultaneously and automatically.
Finally, a fourth proposal is the ring fitting machine, used for the automatic fitting of plastics or metal rings into a rubber packing ring.
www.deliasrl.it

The various solutions offered by Delia are aimed to integrate rubber moulding equipment with safety and productivity features

Direct gazing

Revolutionary extrusion of expanded film

A FAP extrusion line for expanded film

The extrusion lines designed by FAP (hall 16, booth C65, at K 2016) in the last years have revolutionized the production process of PE and PP expanded film. Following continuous perfection, research, and innovation, FAP has gained trust and approval by its customers that continue to rely on a collaborative relationship with a manufacturer with 25 years of global experience in the industry.
The new machines can produce materials with characteristics of quality and density absolutely better than the traditional ones today on the market. The range of FAP extruders ensures productions from 50 to 1200 kg/h and a density below 16 kg/m^3. The materials produced with these systems are 100% recyclable, and technologies and production processes are sensible to atmospheric pollution, do not cause problems to ozone, and minimize industrial wastes.
In addition to the extrusion lines and converting machines for expanded film manufactured with advanced technologies, FAP offers to its customers the know-how, and the specific knowledge of the whole production and converting processes of the foam, resulting from many years of experience acquired directly at its manufacturing sites.
Thanks to an accurate technical research and development of the construction's components, FAP has successfully optimized the production processes and the operation of machines as well as has improved density and homogeneity of expanded film material. Today, its extrusion lines are able to guarantee excellent performance and economic results.
The perfection of the mixing processes of PE/PP by gas and the utilization of energy-saving equipment have allowed to reduce production costs significantly and to achieve great improvements in terms of ratio between energy consumption and quantity of processed product (Kw/kg). These improvements result in an increase of the average revenue and the products' quality.
Despite the difficult market situation and the continuous challenges to face, FAP has never ceased to focus on technological development and machine quality. Furthermore, the company has built an internal research centre with the aim of developing new technologies and innovative solutions in the construction of machines for expanded films, studying new application fields for products with different densities and thicknesses.
The continuous work of experts on innovation and improvements allows manufacturers that use FAP lines to obtain a new generation of expanded film, innovative and unique product in its structure.
www.fapitaly.com

ACF 820 thermoforming machine

Standardization and durability, repeatability and flexibility

The ACF 820 thermoforming machine has been conceived for energy savings

At the K show Amut Comi (hall 03, booth E40) presents in operation a new generation of thermoforming machines, the ACF series. The ACF 820 model combines the characteristics of V and F series, thus creating an innovative model featuring: high level of standardization; exceptional repeatability; rugged durability; flexible production for a wide range of articles; increased high-speed performances.

This range of machines is suitable to handle different materials, such as PET, A-PET, R-PET, C-PET, OPS, HIPS, PS, EPS, PP, PLA, PVC and to produce many items: trays, lids, fruits and vegetables boxes, flowerpots, clamshells, nursery trays and plates.

The ACF series is based on a modular concept and can be supplied in different configurations such as: forming; forming and cutting in the same station; forming and cutting in two stations; forming, punching and cutting in three stations.

Up or down stackers, three-axes robot as well as customized special solutions are available to stack thermoformed parts with different nesting requirements.

To fulfill all thermoforming requirements and to meet any potential demands, the ACF 820 can be equipped with a wide range of options, including servodriven plug assist on upper and lower mould platens, high-performance mould clamping and cutting, quick tool change devices, different oven configurations with power saving heaters, and many others.

The forming and cutting presses are equipped with counterbalanced platens to increase the machine performances at high speed. This series of machines is completely servodriven and equipped with a new software for cycle control that, along with a user friendly HMI, guides the operator through the setting pages, providing full diagnostic analysis.

The ACF machines can be integrated with a T-IML system (In-Mould Labelling for the thermoforming sector), based on a side entry robot to load labels inside the forming mould in order to decorate the articles. The use of steel rule cutting moulds makes this T-IML even more competitive compared to the existing T-IML systems based on punch and die-mould and to injection moulding technology.

www.amut.it

Stretch film extrusion

The first ALLrollEX line in Sweden

The Swedish company Doxa Plast based in Värnamo recently installed a completely automatic 5-layer ALLrollEX-1500 cast stretch film line by Colines (hall 16, booth A39), which is running successfully since commissioning. It performs from the automatic selection of resins to be loaded from silos till full packaging system, with possibility to pack hand rolls in carton boxes or jumbo and machine rolls on pallets.

An innovative film that goes under the name Doxess - for which Doxa has applied for patents worldwide - is being produced successfully on this Colines line at the maximum production speed possible. Doxess, a reinforced plastic film for packaging, was tested by Doxa for a long time before to succeed and the cooperation with Colines helped them to even more optimize the desired product: despite it takes less material to be produced, it is stronger and more stable than traditional stretch film.

For this product Doxa received an award as one of the two best inventions in the country and have met with great success in Europe. This is just one of the several ALLrollEX lines installed by Colines all over the world in the last year.

Doxa Plast CEO, Stig Claesson, with a line operator in front of the ALLrollEX-1500 line

www.colines.it

NEWS

Bag-making machines

Vegetable bags on up to six lanes

Always attentive to the evolution of the flexible packaging market, at K 2016 (hall 3, booth F54) Saldoflex showcases an all-new series of automatic servo-driven bag-making machines to produce vegetable bags, precut and wound up on rolls with cardboard core on up to 6 lanes. At its booth, the Italian manufacturer exhibits the following equipment, visible in operation during the entire event:

- a Rollflex R-1350 5 lanes for producing bottom-sealed vegetable bags, precut, wound up on roll with cardboard core and taped, starting from one jumbo roll of tubular film. The machine is equipped with unwinder for jumbo rolls up to 1300 mm wide and with a 1350-mm sealing bar. This all-new series of machines is available with up to 6 lanes and 1500-mm sealing bar;
- a Rollflex R-1350 Draw-Tape 1-2 lanes is also on display. It produces anti-drop precut garbage bags on roll on 2 lanes or draw-tape precut garbage bags on roll (without core) on a single lane, starting from one jumbo roll of tubular film.

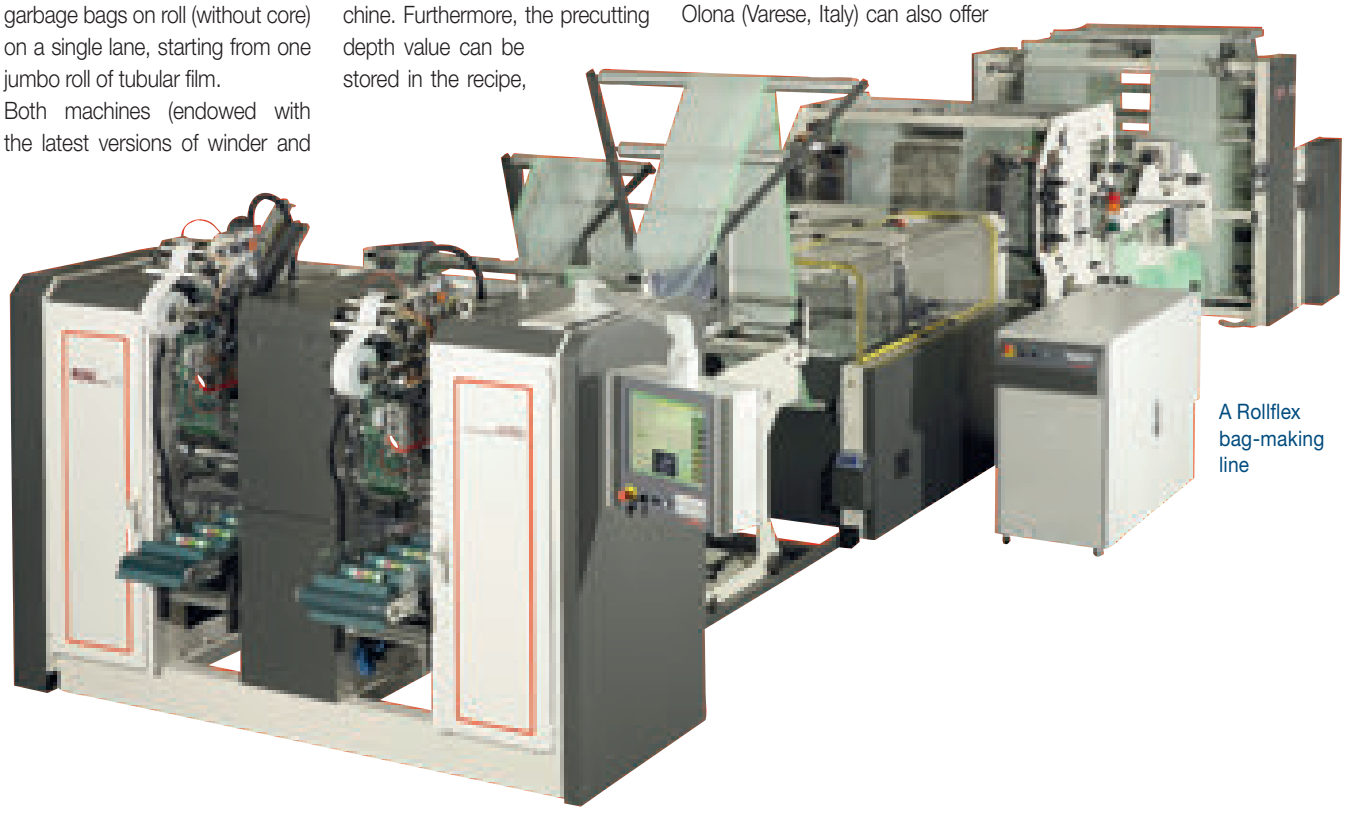
Both machines (endowed with the latest versions of winder and taping units) are servo-driven and equipped with: shaftless motorized unwinder with hydraulic lifting and positioning of the jumbo roll; automatic control of the film tension; automatic edge-guide system; photocell for processing printed film; electrostatic polarizer to obtain perfectly compact and bubble-free bags on roll, also with very low thickness film; "Bio-Ready" technology to process all latest-generation biodegradable and compostable materials. A wide range of options is also available in order to comply with the most demanding needs of processors: motorized gusseting system, star-seal module, C-fold equipment, cold embossing unit etc.

The servo-driven precut system is one of the most appreciated features of the Rollflex series. The precut depth is micrometrically adjustable from a touchscreen during the process, without any need of manual intervention on the machine. Furthermore, the precutting depth value can be stored in the recipe, thus enabling a very quick set up in case of repetitive processes. Also the quick teflon replacement is appreciated. The sealing bar is designed to allow the user an extremely quick and easy replacement of the teflon tape, an operation that can be done in less than 2 minutes. Finally, also the four-stations servo-driven winder (available on 2-3-lane Rollflex and 1-2 lane Rollflex Draw-Tape) represents a key feature: thanks to the 4 revolving winding shafts, it is possible to perform simultaneously four different phases - tearing at the precutting, winding, taping with gummed paper, discharging - thus shortening the overall cycle time. This is crucial in the production of rolls with low bag count. On the 2-lane version, the completely independent drive of the left and right winding stations ensure the best tensioning management, also with critical materials.

The manufacturer from Solbiate Olona (Varese, Italy) can also offer the following range of bag-making machines, all available with inline flexo-printing (flexo presses are manufactured under the same roof as Saldoflex, at the Flexo Division Filippini & Paganini):

- Rollflex 6-Core for precut vegetable bags on rolls (with cardboard core) up to 6 lanes;
- Rollflex for bottom-seal precut garbage bags on roll, flat or gusseted, also with bottom star-seal up to 3 lanes;
- Rollflex Draw Tape for draw-tape and anti-drop garbage bags on roll, on 1 or 2 lanes;
- Modula S and Modula SS for T-shirt bags and bottom-sealed bags up to 7 lanes (stacking system with or without pins);
- Modula SV for bottom-sealed bags and bloc-notes bags up to 7 lanes with pins stacking and possibility of hot-blocking of the stacks.

www.saldoflex.com

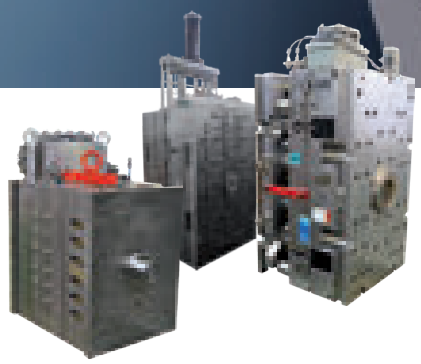


A Rollflex bag-making line

Moulds & Assembly

Technical innovations

Experimental applications



www.gefit.com

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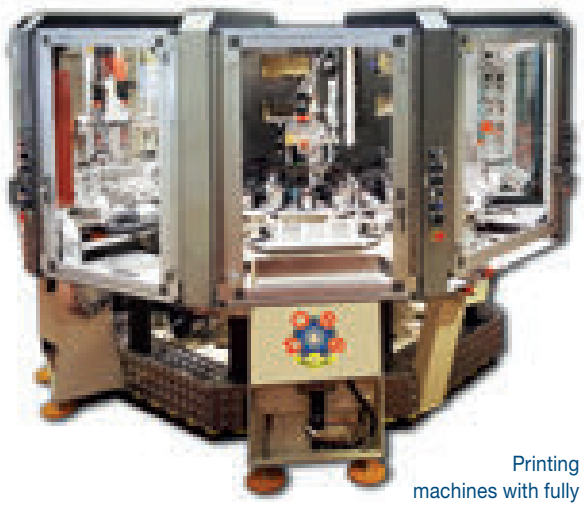
NEWS

Solutions for rigid packaging

Decorating equipment and automations



Printing machines with fully renewed designs for meeting every possible production requirement in a 4.0 Industry environment: this is how Moss aims at presenting its very latest innovations

High tech solutions, printing machines with fully renewed designs capable of meeting every possible production requirement in a 4.0 Industry environment: this is how Moss aims at presenting its very latest innovations at K 2016 in Düsseldorf.

On a booth (B54, hall 4) entirely dedicated to printing solutions, the company presents its machines for silk-screen, dry-offset, heat transfer and hot stamping decoration. In particular, a full electric version of the MHM series with integrated robotized automations for containers loading and unloading.

The silk-screen printing machine is configured with four colour units to decorate jars and bottles having cylindrical, elliptical and flat shapes. A 16-position rotary table of high precision, controlled by a torque motor, holds the mandrels which, in turns, are all individually motorized and controlled by brushless motors. Besides, the machine features a motion control function (for 3-axis control), which allows to achieve 360° non-stop decorations on suitable elliptical profiles. The colours are cured by 16-W air-cooled UV-LED systems, whereas the control of all functions is made possible thanks to a PC/PLC with touch screen panel operator and connected through Ethernet Powerlink technology. A wide LED monitor wired to cameras allows the operator to have easily and constantly under control the behaviour of the four printing units and of all the accessories. Quality vision control system for print inspection is also available.

While MHM is presented at K 2016, further machines are available at the private show, which takes place at the manufacturing plant in Reggio Emilia (Italy). Amongst the other icons of the Moss range, a MS 1070 is showcased, a full electric silk-screen printing machine for cylindrical objects, containers and articles.

Besides, a rotary dry-offset printer MO 2062 is also exhibited. The line is configured with three colours for the decoration of CSD caps. The MO 2062 is one of the undisputed fastest printing machine available on the market, being capable to run up to 300,000 caps per hour, of course regardless the number of colours to be decorated. ■

www.moss.it

Innovations by Mobert

A wide range of lines for every kind of bags

The international showcase offered by K see once again Mobert (hall 3, booth E16) committed to present new thermowelding machines for plastics film that allow its customers to face the market in a winning way. At the 2016 edition the Italian manufacturer presents two innovative solutions: the 110 Roller SHP 2M Cart line; the Nastrosac 110/4M line.

The first is able to produce, on 4 tracks, T-shirt bags with bottom welding, winded on cardboard core. The innovation of this line consists in the exclusive patented systems for the stretch control of each track and for the punching to cut through. These devices make the line particularly suitable for the processing of biodegradable films, also for fruit and vegetables packaging.

The Nastrosac 110/4M line for bottom-welded bags winded on roll with draw string closure has been implemented with new solutions which further increases the product quality and the machine capacity, which, with 25 roll changes per minute of product taped with paper, now reaches the remarkable speed of 300 cycles per minutes. Mobert also manufactures lines for:

- bags with draw string (Nastrosac) on 2 tracks;
- trash bags on 3 tracks;
- bags on rolls for fruit and vegetable packaging up to 5 tracks;
- T-shirt and bottom welded bags up to 6 tracks and collected in packs;
- block notes bags to tear off up to 7 tracks;
- welding and rewinding of industrial bags roll-to-roll;
- industrial bags stacked and folded with a width up to 2000 mm;
- pouch bags (with barrier films) for food and medical industry with an innovative patented systems. ■

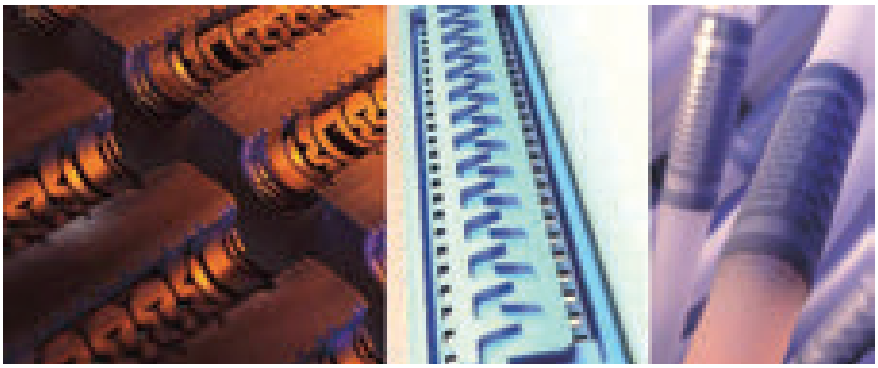
www.mobert.it

A Nastrosac DUO model

Pipe extrusion

All for irrigation

Profile Dies specialises in the manufacturing of extrusion lines for the production of drip irrigation pipes that can insert up to 1,000 drippers per minute



In the plastics extrusion sector for more than twenty years, Profile Dies (hall 16, booth E72) is specialized in the design and production of special equipment and complete systems for drip irrigation pipes, films, flat sheets, hollow profiles and sheets and equipment tailored to customers' specific requirements.

The company also manufactures extrusion lines for the production of furniture trim in PVC, PP or ABS with thickness from 0.4 to 3 mm, PE/PP/PC/PMMA hollow sheets and profiles with thickness from 2 to 60 mm (up to 9 layers), and extrusion lines for the production of flat sheets with thickness from 0.2 to 15 mm.

In the last years the company has developed new automated extrusion lines for the production of drip irrigation pipes with flat drippers which reach a maximum output speed of 200 m per minute and can insert up to 1,000 drippers per minute, as well as extrusion lines for the production of round drip irrigation pipes with a production speed between 80 and 100 m per minute and an inserting capacity up to 400 drippers per minute, to produce pipes with diameter from 16 up to 20 mm.

Still with a view to develop solutions for the irrigation field, Profile Dies has recently presented to the market a new extrusion line for the production of drip-tape. This irrigation system is extremely cheap and is suitable for both crops in open fields and gardens. It is easy to install and to remove after use, thanks to the low thickness of the pipe.

The new line features maximum output speed up to 200 m per minute, spacing (distance between holes) between 10 and 15 cm, and minimum wall thickness of 5-6 mm. ■

www.profiledies.com

PET recycling

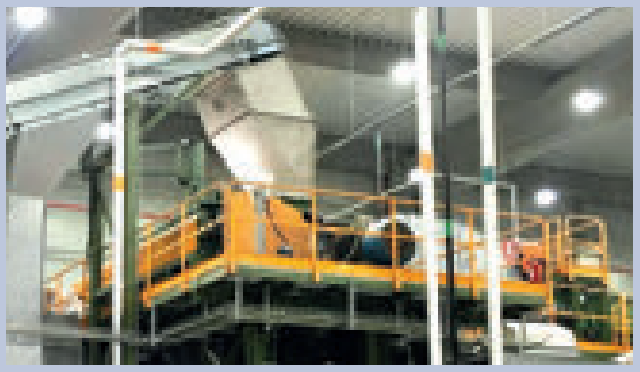
Dripping-free pre-wash

Recently Sorema (hall 9, booth D55) - division of Previero - delivered and put in operation a new designed RPET wash line with 4 tons/h output capacity at an East-European recycling company. The system allows to process the most contaminated bales of PET bottles, converting them in high quality RPET flakes. This new process combines the advantages of the bottles pre-washing (wet-process) with dry and clean environment after the wet pre-washing system.

The machine cleans the surface and removes the labels of the bottles, including the shrink labels, completely separating them from the bottles immediately after the pre-washing phase. The process is designed not to allow the water to enter the bottles. This was the major cause of the water dripping using the traditional pre-washing technology. The possibility to run clean, labels-free bottles, without water dripping, improves the efficiency of the whole recycling operation, providing all the advantages deriving from sorting and grinding the cleaned material after the pre-wash phase.

The quality of the RPET flakes is excellent, and the new process reduces the operating costs with lower consumption of energy, chemicals and water. Also the space requirements are considerably reduced. The advantages of this new concept will make it possible to reconsider the dry phase approach before the wet grinding.

In line with the latest technical development, the company underlines how the RPET fines wash lines have been meeting a growing interest. This technology makes it possible to recover the growing quantity of fines which are also generated by the increasing percentage of thermoforms into the bottles stream. The fines could be hot or cold washed, dried and if necessary sorted by color and/or by polymers. ■



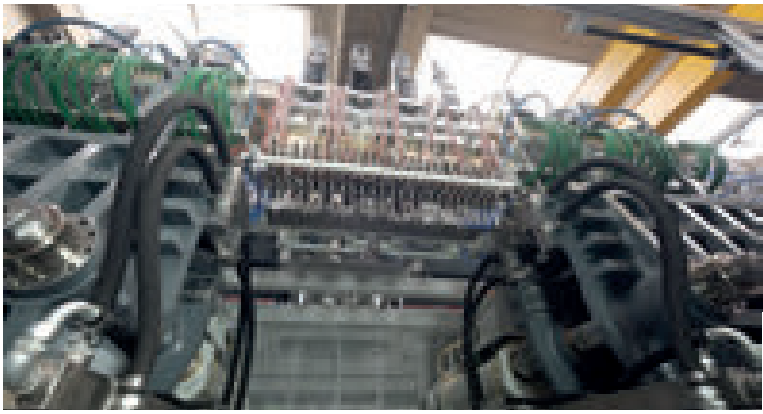
The new pre-washing process developed by Sorema makes it possible to run clean, labels-free bottles, without the water dripping typical of the traditional technology

www.sorema.it

NEWS

R&D go on in Magic MP

New, high-performance, full electric blow moulding machine



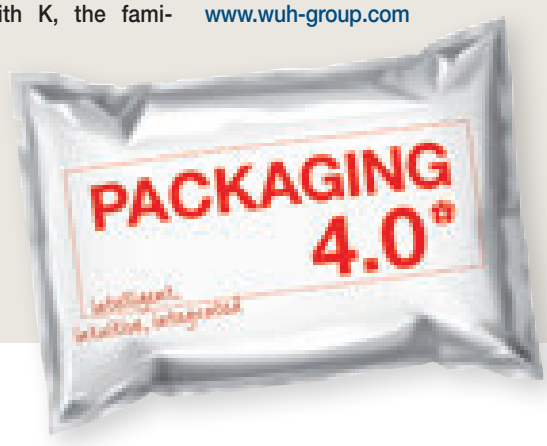
A view of the interior of the new ME-L20/ D-LS1300 machine

The Italian company Magic MP (hall 14, booth C33) introduces the latest model of the ME range, a long-stroke high-performance machine. The ME full electric series belongs to the company's flagship products. For several years it has been manufactured in a variety of models, with the support of processors, on the basis of market requirements and developments.
In details, the latest ME-L20/D-LS1300 model is a long- or medium-long stroke machine, where technology answers the specific needs of a big multinational customer active in the supply of bottles for cosmetics and personal hygiene market. Patented adjustable transfer and a closing system with eccentric arm pushing in the middle of the plates represent the two main strengths of this new model. What is more, it boasts all-electric technology, just like 90% of Magic's production.
The machine is designed for any processors that needs to produce large quantities of pieces. Like all of Magic's machines, it can be tailored to meet individual requirements. Nothing is standard, because Magic is a manufacturer of machines, not just an assembler of pieces. The company manufactures all of its machines in its two factories, located in Monza and Besana Brianza (both in province of Monza Brianza, Italy). Hence, the mechanical structure of its technologies is 100% made in Italy.
Magic built its first electrical machine back in 1997 - that is long before this type of technology became widespread and popular. Since then, the company has manufactured approximately 70-80 machines per year, 90% of which are electrical. It was one of the first companies to industrialize the product, and it has been constantly engaged in doing research and in bringing gradual improvements to its machines. It started with small machines, and later switched to powerful technology with adjustable transfer with rack and pinion. Electrical technology brings many benefits to customers, not just reducing energy consumption; it can boast many competitive edges compared to hydraulic blowing machines.
Electric energy is used intermittently - that is, only while moving - whereas in a hydraulic machine, with an equal number of cycles, the pumps work non-stop to maintain pressure in the system. The philosophy of the electrical system with patented closing changes the concept of massive use of tonnage in standard hydraulic machines. Based on perfectly parallel plates, electrical machines require lower tonnage, even compared to that applied for safety reasons. The cycles controlled by electromechanical components ensure precise repeatability in time, resulting in a higher return on the investment. What is more, they make the company cleaner and quieter.
Magic's latest machine is available with a 24-outlet head and a 50-mm distance between centres. It is not an existing machine "adapted" or made electrical, it is a brand-new product for the market. This new model has joined the approximately 25 existing models of Magic's blow moulding machines.
www.magicmp.it

Innovation by W&H

Machines and technologies for the packaging 4.0

Several innovations, and its comprehensive product portfolio for the production of flexible packaging are presented by Windmöller & Hölscher Group (hall 17, booth A57) at K 2016 in Düsseldorf. "It has become tradition for W&H to celebrate the premieres of machinery and technologies for extrusion and converting at K", says the CEO Jürgen Vutz. W&H will continue to focus on the concept of Packaging 4.0. "We show how intelligent machines, integrated processes and intuitive handling are already increasing efficiency and flexibility of the production", explains the managing director Peter Steinbeck.
Coinciding with K, the family-owned company opens the doors to the 3,000-m² technology centre at its headquarters in Lengerich for a four-day in-house expo. Visitors gets to see several new innovations, among them the newest generation cast film line from W&H. In addition machine demonstrations for printing, converting and blown film as well as a plant tour complete the program.
Subsidiary BSW Machinery, specializing in machinery for the production of woven PP sacks, introduces its new flagship converting machine at K and presents its full product portfolio at its own expo in the Czech Republic, also during K.
www.wuh-group.com



Intelligent, intuitive, integrated: this is the packaging 4.0

Amutec is going green

Following and anticipating processor needs

Thanks to the longstanding and business relationship with the lead customer Virosac, Amutec (hall 3, booth C71) expanded more and more its know-how in the biodegradable material market, becoming one of the main manufacturers of bag-making machines. Experience, professionalism, respect for the environment and customer focus are just some of the many company's peculiarities that distinguish this young and already consolidated company. It was established in 1996 and in the past ten years it became one of the leading manufacturers of bag-making machines and ancillaries for the manufacture of plastic bags. The expertise and positive outcomes achieved in the past years, gave the organization credibility and reliability.

In addition, Amutec's management has a strong business knowledge in the field of bag-making machines, even prior establishing the organization. Thanks to these strong foundations, the management enabled Amutec not only to closely follow the developments of the plastics and biodegradable materials industry, but also to anticipate the customer's needs and to reach a high level of standard for quality and automation.

At K 2016 Amutec is presenting a new range of machines, called TSA-SHA. These machines are roll-to-roll high speed automatic bag-making lines for the production up to 4 lanes of bottom-welded bags, perforated bags, bags with handles (shopper types) and round bottom bags (star bags). These machines are very sophisticated and can reach high production standards (1,000 bags per minute on 4 lanes) also thanks to the use of high quality materials. They includes a full automatic nonstop winding unit, with a high capacity hopper, that allows up to 60 cycles without refilling, and unloading the finished rolls on a conveyer belt. This is also useful for future adaptation of automatic boxing systems.

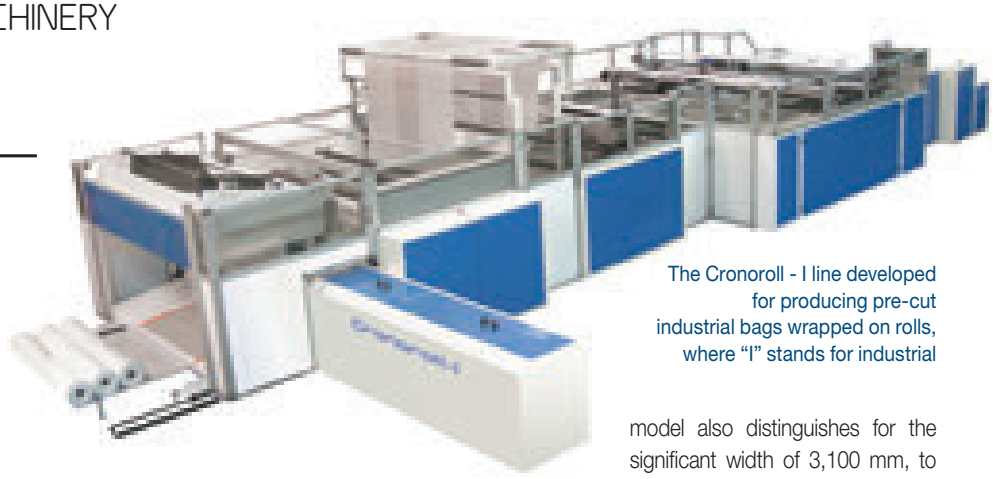
www.amutecsrl.com

A 4-lane TSA-SHA bag-making machine

NEWS

Welding lines

Technologies for industrial bags, but not only



The Cronoroll - I line developed for producing pre-cut industrial bags wrapped on rolls, where "I" stands for industrial

Established in 2013 as the evolution of SGS, a company in operation since 1994, SGS Italia is based in Montale, near Pistoia (Italy), and specializes in the construction of plastic film welding lines and accessories. As well as boasting the technical skills inherited from its experience as SGS, the company can also count on organizational flexibility and its capacity of providing a prompt response to the needs of processors, which has allowed it to acquire a significant market share, especially in Europe. In fact, approximately 70% of SGS Italia output is destined to Europe, with Greece and France being at the top of the list, while approximately 20% is sold in Italy and the remainder is destined to North Africa and Turkey. It still remains a family run business - with Gaetano, Giovanni and Stefano Stanzione making up the management - and it has a dozen employees and is enjoying a significant growth in turnover.

The Tuscan manufacturer is taking part at the K in Düsseldorf (hall 3, stand G90) for the first time, with catalogues, videos, simulations and production tests in order to present its entire range. With great attention being given to the Cronoroll - I, and Cronotek lines.

The Cronoroll - I range is the true diamond in the crown of the company production and has been developed for the production of pre-cut industrial bags (the I in the name stands for industrial) wrapped on rolls and destined to the packaging of several products in different application fields, from plastics granules for processors to rubbles in the building sector, right up to agricultural product conservation.

They are available with widths between 1,100 and 3,100 mm (with working widths of 1,050 and 3,000 mm respectively), the line being made up of modular elements which make configuration possible to suit production needs. The main equipment being a winder that is capable of producing reels with diameters between 150 and 400 mm, a store for the automatic changing of the cardboard cores and an automatic reel unloading system. The mechanical speed varies from between 150 and 220 cycles per minute respectively in the 3,100 and 1,100 mm wide versions.

The Cronotek line is specifically for the production of industrial bags, which, unlike the previous model, are "loose" rather than wrapped on rolls, and collected by means of an automatic conveyor table. This model also distinguishes for the significant width of 3,100 mm, to which is added to exceptional high speed and production simplicity.

The manufacturer also produces a range of accessories that can be installed both on its own welding units as well as on extrusion lines. This includes the Cronoline pre-cutting and welding line, which forms the heart of the Cronoroll - I line, but which can be used in-line with extruders, so that it fitted with wheels that facilitate movement within the production department. It has an excellent production yield and reaches extraction speeds up to 180 metres per minute. The accessories also include the Sealine 45° unit for slant 45° welding on the gussets. It is also highly versatile and can be adapted to any welding or extrusion line. Both these accessories are controlled by 4 servomotors, which always ensure perfect film tautness and constant, high quality sealing.

www.sgsitalia.eu

Plastiblow electric machines

A sustainable blow moulding

Once again Plastiblow (hall 14, booth B56), Italian manufacturer of extrusion blow moulding machines for over 50 years, is present at the K show in Düsseldorf, where exhibits a full electric blow moulding machine producing cosmetic style bottles. The PB14-800ED, a double station, servo-driven class A machine with 800-mm mould holder stroke, 100-mm extruder diameter, 300-kg/h plasticising capacity and 14-ton clamping force, produces bottles by 6 cavities per side with 120-mm centre distance. The extrusion head has been designed to allow a greater control of the parison and permits even quicker colour changes.

Two servo-driven axis robots pick up the bottles after deflashing and place them on a linear belt conveyor, which sends all the production to a single collection point. Thanks to the new modern design of the machine structure, the footprint is now much more compact.

The PB14-800/D is equipped with an in-line quality control device for the bottles, giving the possibility to check and discard any defective pieces. The device checks the presence of micro-holes, deformation and obstruction of the neck and detects sprues.

Plastiblow has over 15 years of experience in the manufacture of electric machines, and has installed worldwide a large numbers of them, each working reliably with complete satisfaction of the customers, who also appreciate the advantages offered by its equipment: reduced environmental impact, lower energy consumption, increased productivity, greater reliability and lower maintenance costs. www.plastiblow.it

A detail of the Plastiblow electric blow moulding machine

Machining centres

All the know-how of wood processing applied to advanced materials

Sheet machining using a Skill Plast FT 1224

The machining centres produced by the Plastic Materials and Advanced Materials division of the company Biesse (booth B33, hall 4, at the K fair in Düsseldorf) include a number of models ranging from basic three-axis machines like the Rover Plast J to rather more complex CNC machines like the Rover Plast A and the Rover Plast B.

As regards the CNC machines, obviously all the historical know-how of the company in the area of wood processing has been preserved, while also trying to cater to the specific needs of customers who process plastics, so as to obtain better performing machines overall. Accordingly, Biesse has improved the performances of the electric spindles, making them faster. In particular, it recently presented a five-axis version of Rover Plast B featuring an electric spindle capable of reaching 36,000 rpm and delivering sizeable power.

"It is a machine that completes the high end of our range of CNC machines for plastic processing, and allows articles in acrylic resin (usually PMMA) to be processed with a quality of finish that is superior to all current market standards", remarked Matteo Nazionale, product manager at the company's Plastic Materials and Advanced Materials division.

Its performances have also been enhanced through the addition of optional devices such as the tangential swinging blade for cutting and the video cameras for the management of print markers. Furthermore, the work tables have been modified in order to develop a technology based on a new clamping system, which has never previously been used and is capable of providing much more capacity and of processing breathable materials too. With all this, Biesse is able to offer a machine able to satisfy the all-round needs of the plastics world.

For its part, the Skill Plast FT 1224, featuring a 1200x2400 mm work table, also has a cutting unit with tangential swinging blade, a video camera for the management of print markers, and a work table that manages dual load: high head pumps and high delivery pumps. It is complete with a high-speed electric spindle, tool cooling systems, and several technological solutions that improve the quality of the finish and facilitate the evacuation of the chips generated. It also features a whole series of tool magazines which can be fitted on the rack, or on the X or Y carriage.

www.biesse.com

NEWS

Advanced regeneration

Removing moisture from high-contaminated materials

The Tecnova range includes lines suitable for satisfying the most varied requirements of polymeric material regeneration

Always at the forefront in recycling equipment for all polymeric materials, Tecnova (hall 17, booth A18) can manufacture extrusion lines suitable for all the needs of the industry, from laboratory systems up to lines with a 2-ton/h capacity that can process many different types of plastics, from the traditional ones to biopolymers. The company is active all over the world, without neglecting the Italian market that continues to give satisfaction thanks to the many machines installed and working efficiently.

Regeneration of plastics is constantly evolving. For this reason, it is essential for a recycler to have the best performing and reliable equipment available at the time. Today the process requirements are moving more and more frequently towards the recycling, processing and exploiting of materials with a high degree of contamination and moisture, like, for example, heavily printed products.

The double degassing systems by Tecnova are able to remove moisture up to values of 7-8%, which can go up to 15% with the new degassing system called VTS (Vacuum Twin Stuffer). As a result of constant research aimed at continuous improvement of single-screw extrusion lines, the natural degassing VTS system with automatic restore of the melt material.has been developed. This component is able to double the capacity of the lines, both with single and double vent, processing material with high moisture content.

In fact, it is now possible to increase the value of maximum moisture removed from 3-4% to 7-8% with 37-D lines and from 7-8% up to about 15% with 54-D lines. This results in a proportional increase of the hourly production of these lines with equal amounts of material being processed. By adopting these solutions, it is therefore possible to remove 80-90% of humidity.

Tecnova technologies have been strengthened over the years, following the evolution of the market and customers' needs: on the one hand, the need to process more and more contaminated materials and, on the other hand, the will to obtain a product that can be used in a economical and competitive way to manufacture new products. Another critical issue is the fact that many companies, optimizing their processes, are able to reuse the recycled, less contaminated, material internally.

An aspect not to be overlooked is the high energy efficiency of Tecnova plants, obtained by adopting AC motors. Furthermore, Tecnova lines are versatile, reliable, and with a mechanical configuration which facilitates access to the different parts during maintenance. Tecnova takes part in K 2016 in Düsseldorf with all the companies of the group and exhibits a machine for the recycling of scraps of extruded films.

www.tecnova-srl.it

Change your perspective

2016

Hall 16 - A05
Hall 03 - E40

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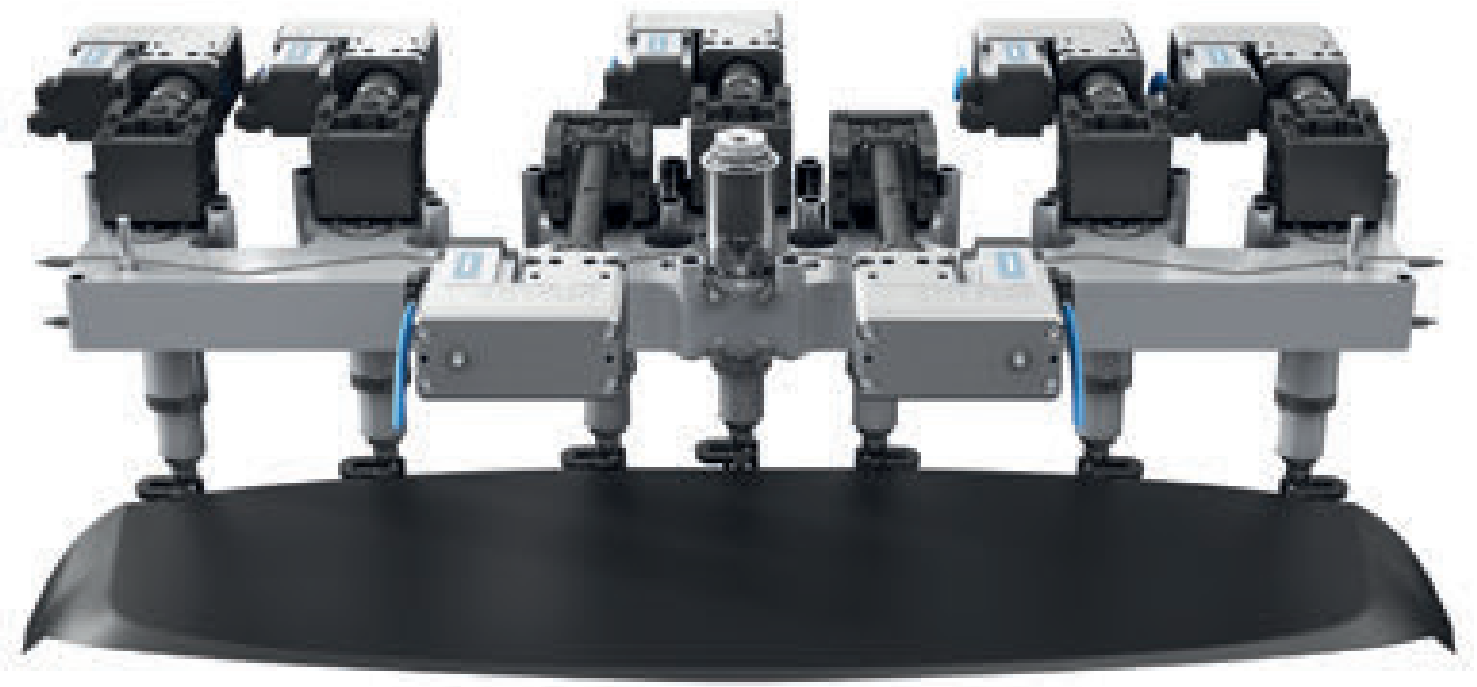


INNOVATION BY INGLASS

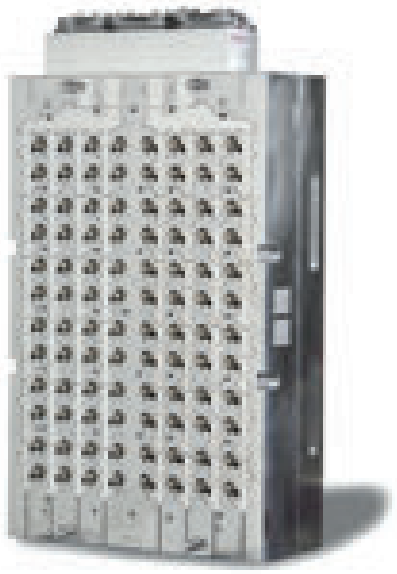
TECHNOLOGICAL DEVELOPMENTS APPLIED TO INJECTION SYSTEMS

MORE THAN 1000 EMPLOYEES, REVENUES IN 2015 REACHING 123 MILLION EURO, MANUFACTURING FACILITIES IN ITALY, FRANCE, CHINA AND UNITED STATES: ALL THIS PUTS THE ITALIAN INGLASS GROUP AT THE TOP OF ITS FIELD. IN RECENT YEARS, IT HAS BUILT UPON ITS VOCATION FOR INTERNATIONALISATION AND PRODUCTION DIVERSIFICATION, THANKS TO STATE-OF-THE-ART TECHNOLOGY FOR PLASTIC INJECTION MOULDING

BY **LUCA MEI** AND **RICCARDO AMPOLLINI**

A quality finished product, operating efficiency, reduction of costs: solutions to optimize processes and to increase competitive edge. This was the topic discussed by Alessandra Bosco and Moreno Carvani from INglass in their presentation at the sixth Technological Innovation Forum (SIT - Seminario dell'Innovazione Tecnologica), organized by Piovan at its offices at Santa Maria di Sala (near Venice) last April. The two speakers started out by pointing out how today, the competitive edge of a technology supplier has shifted in the direction of its ability to provide complete solutions that can guarantee quality, efficiency and economics at the same time, and how that capacity has in fact always guided growth at their company.

Established in 1987 in San Polo di Piave, near Treviso, as a moulder of automotive lighting systems, as early as 2001 INglass began to build hot manifolds, setting up its HRSflow division (stand B08, hall 1, at K 2016) for this purpose, driven by the fact that processors no longer looked for single elements of a process, but rather complete systems that create



Injection system with 96 cavities for applications with fast cycle time and excellent aesthetics

the right conditions for developing whole projects. This philosophy was also followed later when, in 2010, a product line was created dedicated to the multicavity injection moulding sector. Today, in practice, the company can supply complete solutions to all market segments of the plastic industry.
In recent years, it has wanted to supply complete solutions to optimize production processes for moulders, and this has guided the development strategy at INglass. From a technological standpoint, this has led to innovations representing milestones in injection moulding, such as conformal cooling of the mould through the deposition of steel using the SLM method (Selective Laser Melting); in terms of company growth, on the other hand, in 2014 it acquired the French company Ermo, manufacturer of high precision multicavity moulds. This expansion has permitted further activities of research and development to be pursued, and synergy within the group with access to unique, patented technology, such as multicomponent in-mould assembly (IMA) and servo-driven valve gate control for large components (FlexFlow).
The range of solutions for optimising the production process is based first and foremost on the company's ability to create rheological simulations in all its centres around the world, which are, in addition to its European sites, Turkey for the Middle East, China and India for Asia, Canada and the United States for North America and Brazil for the Mercosur area. Such analysis, in some ways quite common, in other ways centred on fluid dynamics, thermal and structural aspects, means long life is ensured for all components and, more generally, for systems developed with HRSflow, such as obtaining components with constant weight and quality with reduced energy consumption. One of the most important rheological analyses is, without doubt, structural, as it can identify tensioning for the item being moulded and define the optimal system configuration used to make it, drawing on the best technology developed, such as, for example, SLM, and avoiding the use, in many cases, of prototype moulds.


Alessandra Bosco, director of business development for INglass, talks at SIT 2016

MORE EFFICIENT MOULDS WITH SELECTIVE LASER MELTING

SLM can be considered a variation on 3D printing, a very popular technology at the moment. This variant is also based on a 3D printer which, however, works with martensitic steel powder to make components, such as the inserts inside a mould. The latter, comparable to forged inserts, however offer some advantages, first and foremost the option of using the conformal cooling system in the exact point needed by the particular application. Mould cooling represents approximately 60 to 75% of the total cycle time and inevitably influences the quality of the finishing product.


SLM Technology - Inserts with channels shaped according to the piece to optimise cooling

Systems that combine hot manifolds with conformal inserts include, for example, the production of polypropylene ophthalmic caps with thicknesses of between a millimetre in the safety seal zone and 2.2 millimetres at the injection point which is what, in fact, dictates the injection time. In this specific case, therefore, it is possible to adjust the temperature at the various points of the cap or, in other words, even it out as uniformly as possible with the lowest thickness (one millimetre), in order to obtain a faster cycle time without, however, compromising the final quality of the item. In practice, the cycle time can be reduced by 25%.
The characterising aspect for this type of technology for INglass is to permit an absolutely precise thermal calculation which, combined with the thermal values of the hot manifolds, translates in an absolutely reliable result in terms of repeatability and quality.

SEQUENTIAL MOULDING: OPTIMIZED WITH ELECTRICAL NEEDLE VALVE

To optimise sequential moulding, on the other hand, HRSflow, has developed and patented FlexFlow technology, based on an electrical motor that controls movement of the needle valves in sequential moulding. Devised for the production of large size articles and technical components destined primarily for the car industry, FlexFlow replaces hydraulic or pneumatic jacks with electrical motors connected directly to standard needle valve systems. This permits, first and foremost, better control of the speed and positioning of the needle valves during sequential moulding compared to hydraulic and pneumatic systems.
Hydraulic and pneumatic systems normally experience dips in capacity and in the injection pressure, which translates into warping and deformation of the items. The introduction of an electrical jack has meant these drawbacks have

been resolved, and through better speed control and better needle valve positioning, management of the capacities and pressures during the moulding process sequence can be optimized, with the advantage of repeatability and dimensional stability.

In practice, the control permits independent adjustment of each injector during the moulding process, not only of speed and positioning, but also of the stroke and acceleration of each needle valve. This control is managed by a special central unit developed by HRSflow.

FlexFlow technology is today developed particularly for applications in the car industry, where technical performance must be accompanied by high aesthetic standards; these include, for example, bumpers or large sunroofs, completely eliminating the so-called pressure lines, which in many cases would still be visible even after painting.

One of the most typical applications of this technology that can best benefit from the advantages it offers is the moulding of car thin polycarbonate headlight lenses (see box below). In this context, sequential moulding has proven it can be used in all those processing sectors where process repeatability and stability and, therefore, production, become vital requirements for ensuring the right degree of performance and aesthetics.

In summary, therefore, the advantages deriving from FlexFlow technology are: reduction in clamping force during the moulding process; wider process window; reduction of article deformation and improved aesthetic quality. The reduction of pressure peaks in the component reduces the clamping force by about 20%. Moreover, the greater uniformity of pressure distribution in the moulded article reduces material waste and scrap by approximately 4%. If this is considered in combination with greater system reliability, with a consequent reduction in service and spare parts, the result is lower production costs and greater profitability. ■

www.hrsflow.com

Thinner and lighter lenses

Large-scale production of big car headlight

The finely regulated FlexFlow servo-driven valve gate system from HRSflow, an INglass division, now makes it possible to carry out the series production of large-format car headlight lenses by cascade injection moulding. Compared with the conventional standard process, it enables the part weight to be significantly reduced while maintaining the specified high quality. Especially with the cascade injection moulding process, the electrically driven needle valve nozzles allow the precise, sequentially coordinated opening and closing of the valve pins with selectable velocities. This in turn permits accurate control of the melt flow in the individual hot runner nozzles and the volume flow in the cavity as a whole. With the gentle opening and shutting of the valves, the dreaded pressure loss that occurs with conventional cascade injection moulding methods through the abrupt sequential switching-on of the hot runner nozzles is avoided and, with it, the accompanying marks on the moulded part. In automotive construction, the FlexFlow technology has advantages in particular when injection moulding large-area exterior and interior parts such as spoilers, front ends, instrument panel supports (IPS) and door liners - and now also headlamp lenses made of crystal-clear PC.

Systematic tests were aimed, with the help of the FlexFlow hot runner technology, at reducing the thickness - and thus also the weight - of a series-manufactured headlight lens by lowering the amount of material required without any sacrifice of quality. The 2.5-mm thick, 887-mm long and 120-mm wide original lens, weighing 450 g, is centrally gated on the side. With the resultant laminar flow of the melt into the cavity, the weld lines and flow lines that generally occur with multiple gating are avoided. The test mould simulating the original version with a glass thickness reduced to 1.8 mm was equipped with five FlexFlow hot runner nozzles along the length of the glass. To overcome the flow resistance of this narrow cavity, an injection pressure of well over 2,000 bar would be necessary with a single central gating point. In the studies, the traditional cascade injection moulding method was compared with the synchronized switching-on of the hot runner nozzles with the pin always completely open, and the cascade injection moulding process with FlexFlow control of the pin position of the hot runner nozzles.

As expected, there are considerable problems with the traditional cascade injection moulding process. The abrupt opening of the valve pin when switching over to the next injection nozzle along the flow front produces substantial pressure fluctuations when filling the mould cavity. This non-uniformity results in clearly visible optical defects (pressure marks) on the surface of the moulded part, which, in the production of transparent headlamp lenses, would make them rejects.

With the precise FlexFlow control of the cascade, the pressure fluctuations on switching over the hot runner nozzles are balanced out. The cavity is filled with a uniform melt flow, as a result of which the surface of the moulded part does not have any optically relevant defects. The net result are high-quality, crystal-clear headlamp lenses that can be produced reliably and reproducibly - and with a thickness of only 1.8 mm instead of 2.5 mm and a weight of only 350 g instead of 450 g. ■

Servo-drive for the FlexFlow system for precise regulation of the hot runner nozzle valve (left in the photo), developed for a sequential mould with 5 injection points for the production of large PC crystal lenses for car headlights (on the right in the photo)

AN AMAZING OPEN HOUSE AT RODOLFO COMERIO

THE PRIDE OF ITALIAN MADE CALENDERS

"There was a real battle to win this contract. Our competitors being some of the best calender manufacturers from all over the world, Japan, Taiwan, Korea... The best thing being that after having chosen us, the client, a company from the Republic of China, also pragmatically told us that we were selected despite the fact that our quotation was the highest. Only in Rodolfo Comerio did they see the right know-how to fulfill such a complex project in the field of thermoplastic resin lamination and bonding of special resins, a truly major and ambitious project", proudly says Nicola Fedele, sales manager of Rodolfo Comerio (stand B54, hall 16, at K2016), which manufactures calenders for plastics and rubber in Solbiate Olona, a small town near Varese, Italy.

This satisfaction is well merited especially as regards the unique technical features of two of the machines making up the important supply contract that the Italian company has won. A first massive 5-roll calender with a diameter of 870 mm, length 8,000 mm and overall weight of 28,000 kg; and a second equally massive calender, but having "only" four rolls, but equal to the former. The scale of these calenders being such that when we saw them at the factory, we felt like the inhabitants of Lilliput Island, as if we were only six inches high, and faced with Lemuel Gulliver in "Gulliver's Travels". Leaving fiction aside however, we are here talking about production systems, that will require no less than 60 containers to be sent to the end client in China.

A WINNING KNOW-HOW "MADE IN ITALY"

The comment made by Nicola Fedele on the fact that the Chinese buyer had never seen calender know-how to equal that of Italians, needs to be looked into in more detail.

"The term know-how means that blend of knowledge and ability, competence and experience to carry out a specific operation within industrial and commercial sectors", points out Nicola Fedele. "So that it follows that the correct meaning of the term know-how is a blend of knowledge, attitudes which may or may not

RODOLFO COMERIO OPENED ITS DOORS FOR TWO DAYS IN AUGUST, FOLLOWED BY AN OPEN HOUSE SHOW FROM SEPTEMBER 14 TO 20, TO ALLOW BOTH ESTABLISHED AND PROSPECT CUSTOMERS TO ACTUALLY GET A FEEL FOR SOME OF THE LARGEST CALENDERS FOR PLASTICS EVER MADE ANYWHERE IN THE WORLD. AS WELL AS TO GET AN INSIGHT INTO THE EXCELLENCE OF THE MECHANICAL WORKMANSHIP ON THE STRUCTURAL PARTS, AND THE LOGIC BEHIND ITS ROLL-BENDING AND CROSS-AXIS SYSTEMS

BY **ANGELO GRASSI**
AND **RICCARDO AMPOLLINI**

Staff and partners of Rodolfo Comerio that organized and took place in the open house, near one of the two big calenders: the pose providing an idea of the actual size of the machine

be divulged, patented or not, but which is able to transmit to the client a feeling of "painstaking know-how", that puts his mind to rest and gives him faith. Exactly in the same way as the Chinese client a few months ago, ordering the two "Guinness world record" breaking calenders".

With the help of Fedele it has been possible to draw up the following scale of values and strategies, which has gradually built up the corporate know how, and in this specific case made such an excellent impression on the Chinese client as mentioned above.

1. The advantage of being recognized as an authentic Italian company

"We are rather like an enlarged craftsmen company, but we are proud of this, because I feel that huge companies are not considered to be the intrinsic essence of the Made in Italy", Nicola Fedele goes on to say, after having pointed out that the most important corporate mission is that of raising the banner of the authentic Italian love for excellence.

"When Rodolfo Comerio first set up the company in Busto Arsizio in 1878, the main market was the textile industry that was booming at the time. In the early 1900s, Rodolfo's son Enrico - began the development and production of machine tools, while his grandson who was named after him in his honour, has led the company towards the manufacture of rubber and PVC processing machines. The current owners, Enrico and Carlo - Rodolfo's sons - have continued to expand the company and in 1981 they set up the new factory in Solbiate Olona, which currently employs 85 people, and which has launched an ever more innovative range of calenders. I also enjoy pointing out that I am sure that some of the calenders that left our factory in the early 1900s, are still in operation in factories somewhere in the world, obviously with the necessary maintenance. This all goes back to the value of our craftsmanship, for which quality is the primary objective".

2. The strategic, financial and social aspects of outsourcing

The English term "outsourcing" means appointing an external company to undertake a corporate operation … and this is certainly not a new trend. In the 17th and 18th centuries, the important sugar production business was already divided into various stages, and the main business partner was only responsible for the overall control of the complete cycle. It is however true that outsourcing started to become common after the Second World War, and even more common in the 1990s. Of which Rodolfo Comerio was aware.

Nicola Fedele resumes: "Around 1998-1999 our business was doing very well, with no hitches, but the company had a kind of dated image. In the sense that, in honour of the initial historic imprint, the factory organization remained so self-contained as to even have its own foundry inside it... this as a way of example. However thanks to the forward-looking approach of the owner, he began to consider more long-term strategies for the good of the company, and as a result decided to outsource a certain number of processing operations, but the question remained, which ones? And, more important, where?

In relation to production stages the choice was easy, as processing operations of low intrinsic value were initially chosen (such as steel structural work for example), then those of an extremely specialized nature (such as heat treatments) and finally the casting process.

However the question of "where" to outsource was more difficult. On the one hand we were aware that many companies follow a policy of off-shoring, the outsourcing of operations to a foreign country, and even multi-shoring: outsourcing to more than one country at the same time. In this way company costs are drastically reduced, but the downside is the loss of the true Made in Italy banner.

While in the early years of 2000, without even leaving our local site, we began to hear of many good companies that were affected, or even risked going under as the result of the recession. We therefore immediately decided to ask some of these companies to work for us as sub-contractors, and we offered other companies financial aid in order for them to restore their competitiveness. In this way our production costs and procurement times have benefitted, while at the same time we have been able to help struggling Italian companies, and in so doing have truly reinforced our image as champions of the Made in Italy cause".

3. Ongoing innovation in strategic in-house manufacturing processes

Calendering is a well-known and much used process. It is a mechanical procedure which transforms a mass, that is rendered fluid through heating, into laminates, as the result of crushing between several rolls that have a high degree of surface smoothness. Calendering is particularly used in the processing of polyvinyl chloride (PVC), although it can also be applied to other thermoplastic materials such as polyolefins (polyethylene and polypropylene primarily), or elastomers such as rubber, fluorosilicone rubber or silicone. It is obviously also used for other types of processing such as for the processing of coated paper or in the lamination of thermoplastic resins, rubber or silicone, with metallic sheets and fabrics, textiles, fibreglass, carbon fibre, amongst others.

In the picture, from the left: Nicola Fedele (sales manager for rubber industry), Carlo Comerio (managing director), Enrico Comerio (president) and Francesco Fiamminghini (purchasing manager) of Rodolfo Comerio

With reference solely to PVC and rubber processing, the calender which is positioned immediately after the head-die unit of an extrusion/mixing line, generally consists of two, three, four or five internally heated cylinders and which are generally arranged into an "tilted I" or overturned "L" shape for the PVC, or 70° "tilted I" to or "S" shaped for rubber. Here we come specifically to the know-how of Rodolfo Comerio.

The calender generally consists of parallel axis rolls at adjustable distances, which feature low-speed rotary drives on their own axes. It must be remembered that processing consists in passing the plastic material through the various rolls, rather than non-vulcanized rubber blend, which is not always in a pasty state.

"Despite the fact that the speed of the material in the calender is fairly limited, the enormous rolls used are physiologically affected by a significant flexion, generated by the compression resistance of the processed material, creating an "arrow" in the middle section which greatly jeopardizes the thickness uniformity of the sheets" Fedele explains. "We are able to reduce the effect of geometric anomalies to practically zero, on the one hand, through the application of vectors with perpendicular force to the rolls, in order to provide a contrast where the process material is required, and on the other hand by thermostating the rolls. These corrective actions are effective if backed up by considerable know-how of how to undertake ad hoc cambering in the workshop, as well as the skill in undertaking complex deep drilling in the massive rolls, on which to manage the heating/cooling curves during the calendering process".

"It is here that great investments have been made and continue to be made, in modern boring and milling centres, as well as in automatic ultradeep drilling machines or that are rigid, powerful and efficient. These are procedures that the skilled craftsmen at the workshop are capable of assuring with the greatest accuracy - such as oxygen cutting which is based on the principle that ferrous materials that contain carbon when made incandescent, are able to burn if they are in an properly oxygenated atmosphere. As well as the calibrated finishing on the castings for the machine's shoulders; in which structural rigidity is in fact a dogma, to such an extent that the abutments in electro-welded steel structural work is not even taken into consideration", concludes sales director Rodolfo Comerio.

Once again at the workshop we were able to verify that Rodolfo Comerio is a manufacturer that, still today, takes pride in assembling the complete calendering line at its own premises before delivering them to clients. It is a long and complex operation, which at the end of the day, assures that there are no problems on installation at the processor's factory, even though it is in fact a system that has already been tested right down to the last logistics and plant details: the "on board" power parts included, which alone allows for a saving of 35-40 days to be made in the starting up stage at the client's premises.

"The two massive calenders that we have designed and developed ad hoc for the lamination of thermoplastic resins and for lamination with special materials, will be officially unveiled for the first time worldwide at the K trade show of Düsseldorf, but only through simulations, 3D films and photographs that show the various construction phases. It has to be said that we are talking about machines, that require 60 containers for delivery to the client", explained Nicola Fedele, the sales manager of Rodolfo Comerio

On the first days of August - as well as in the period September 14-20, 2016 - operators in the plastics sector were given, and will get, an opportunity to "admire" within the inside of the Rodolfo Comerio factories, not only the massive 5-roller calender of 870 mm in diameter and length of 5,000 mm on the table (8,000 mm if we take the roll pins into account), but also the imposing 32,000 kg shoulders of another equally massive 4-roll calender, again with a diameter of 870 mm, length of 8,000 mm and overall weight of 28,000 kg

4. A family that sees the future of the company in that of young students

The company sales director again goes on to explain that Rodolfo Comerio collaborates with some of the local technical institutes, in order to give imminent school leavers the chance to enter the company in order to "get hands-on experience and to get to know each other". It also collaborates with the Polytechnic of Milan, with which it has recently signed an agreement, in which it has appointed undergraduates to complete certain specific mechanical projects on the new calenders.

KNOW-HOW COMBINED WITH AN ENVIABLE DEGREE OF CORPORATE SUSTAINABILITY

That the blend of attention to preserving the authentic Made in Italy excellence, outsourcing management and faith in the new generations is a winning card, has been recently confirmed by a recent ratings published in the monthly "Varese News", in which this Lombard company holds one of the top places amongst Italian companies as concerns ROE (Return On common Equity), which in corporate financial terms, is an index of the returns of the corporate capital. Which clearly highlights the economic standing of the company.

No mean feat for Rodolfo Comerio… being only a standard and typical Italian SME!

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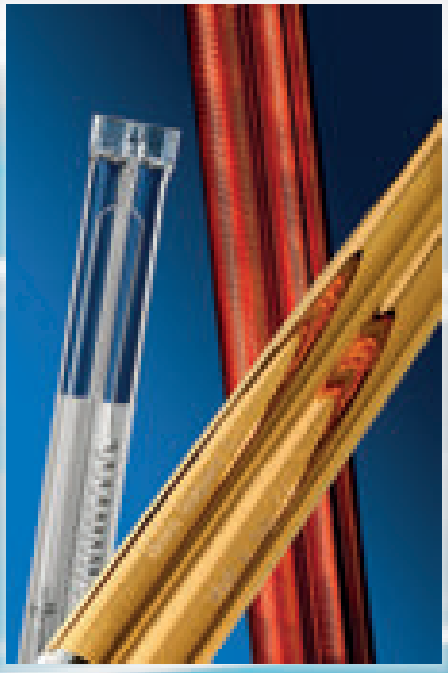
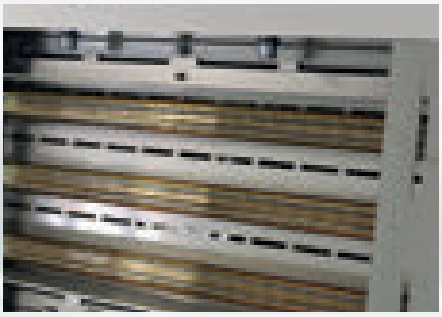
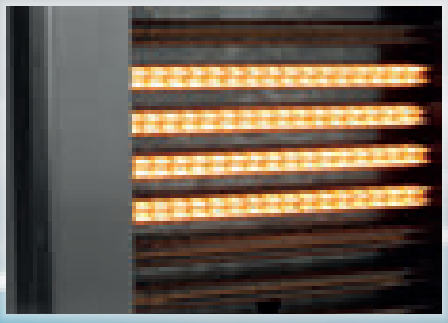



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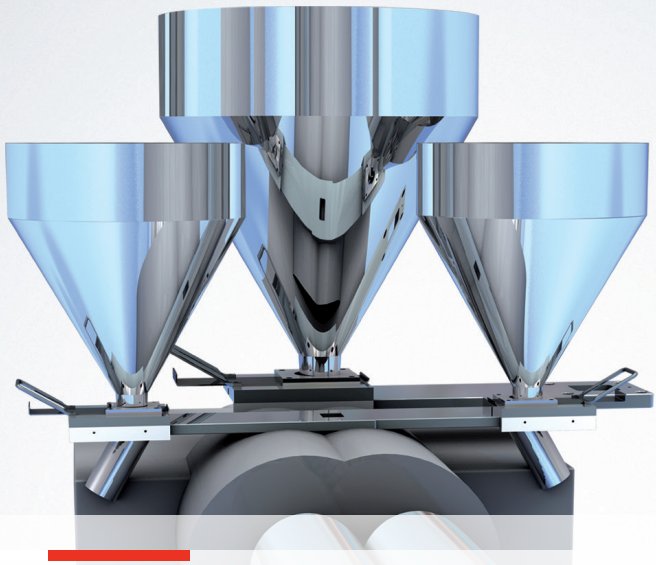

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EXA conveying system for up to six stations

KUSTSTOFFE, MORE COMMONLY KNOWN AS K, IS WIDELY REGARDED AS ONE OF THE MOST IMPORTANT EXHIBITIONS FOR THE PLASTIC PROCESSING INDUSTRY. AT THIS YEAR'S SHOW (DÜSSELDORF, OCTOBER 19-26) MORETTO, A LEADER IN AUTOMATION TECHNOLOGY FOR THE PLASTICS PROCESSING INDUSTRY, PRESENTS SEVERAL EXCLUSIVE SOLUTIONS - MOISTURE METER, A RESIN MOISTURE ANALYZER; XD 10, A HIGH PERFORMANCE MINI-DRYER; DGM, A CONTINUOUS BATCH GRAVIMETRIC DOSING UNIT; AND EXA, A CONVEYING SYSTEM FOR UP TO SIX STATIONS

K 2016 PREVIEW

ACCURATE AND EFFICIENT MOISTURE CONTROL

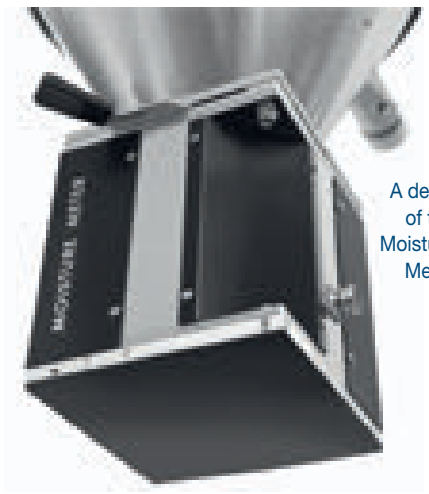
At Moretto's booth H57, in hall 11, there is a working display of the Moisture Meter in-line resin moisture analyzer, installed on a running injection moulding machine producing a standard medical device. The Moisture Meter project started at Moretto six years ago and is the culmination of the cooperation of two universities and an independent research laboratory. Trial applications, at Moretto's customer sites, have been running for over one year and have contributed to continued product development. Today, Moisture Meter is ready for wide sale distribution and K is an opportunity to announce its global availability.

With this instrument it is possible to certify the production of plastic parts and, when installed directly on the processing machine, it measures the actual moisture content of the plastic granules. No calibration is required - it is only necessary to select the polymer from an included database of materials to be treated, and Moisture Meter will continuously control the process with sampling every 10 seconds. This system represents the missing link in the overall drying process.

With so much energy focused on talking about dryers, their efficiency, dew point etc., everyone has ignored the main objective... regulating how much water remains in the process resin. With Moisture Meter it is now possible to know.

Complementing this innovative instrument is also the availability for on-demand analysis to produce reports on production data by hour, minute, or, in the case of single cavity mould production, a report for every printed piece. The instrument comes equipped with Ethernet, USB, RS485 communication ports, and is compatible with the Moretto Mowis supervising system.

Furthermore, with the Moisture Meter Plus upgrade it is also possible to control the dryer performance by comparing the humidity from the initial part of the process to the end, automatically adjusting the dryer parameters to ensure optimal drying. This concept creates a closed loop connecting the material, dryer, process quality, and plastic processing machine, which represents the



A detail of the Moisture Meter

The One Wire 6 wireless auto-adaptive automatic conveying system is another novelty presented by Moretto at K 2016

ideal condition to move straight ahead, towards Industry 4.0.

XD10 MINI-DRYER

Moretto has one of the broadest ranges of dryers available on the market, including the XMAX range. Now the company, with over 10,000 Dry-Air mini-dryers sold, is increasing the number of these machines equipped with a mini turbocharger and zeolite technology. Similar to XMAX, the XD10 mini-dryer has an included turbocharger, developed in-house, capable of generating the required air flow with a consumption of only 60 Watts. This product guarantees consistent performance and is equipped with industry-leading features including: dew point equalizer; variable adaptive airflow; double turbine (process and regeneration); and a colour touch view control. The XD10 mini-dryer represents a high performance mini-dryer suitable for low production and processing of engineering polymers.

GRAVIMETRIC CONTINUOUS BATCH

Sixteen years on from the time the first DGM gravimetric dosing units were first produced, Moretto now announces its latest innovation. With more than 12,000 machines sold worldwide, several new innovations have been implemented to make the machines even more functional and precise. The beating heart of these systems, the traditional double eyelid shutter, is unchanged, featuring 25 milliseconds per batch (according to Moretto, this is much faster than any other product of its kind by the most accredited competitors). DGM has a renewed chassis design which focuses, in particular, on process visibility. The machine has four opening sides, featuring four transparent panels that provide unique visibility to the dosing process. The internal parts of the machine are illuminated with multicolour LED lighting with four different colours to signal the machine operating status. The inclined mixer offers precision mixing and emptying without stagnation. In addition, the mixer is weighed on a double load cell to ensure precise weighing and the included totalizer function offers the possibility of finding out actual consumption. This feature also allows for real-time indication of material consumption and transformation. With these innovations the DGM series of dosing units is ready for the most intensive applications.

EXA, whose name is derived from the greek “exi” (six), a perfect number in number theory, is a conveying system capable of managing up to six receivers. It does not require a server and it maintains all the One Wire 3 centralized system functions.

At the Moretto booth are also displayed:

- XMAX - Innovative modular dryer with consistent performance;
- Crown - Totalizer for conveying systems consumption;
- OTX, the “Original Thermal eXchange” - High energy efficiency hopper;
- One Wire 6 - Wireless auto-adaptive automatic conveying system;
- Master 300 - Touch control for centralized conveying systems;
- Krystal DVK - High visibility, high-precision master volumetric dosing unit;
- TWP S - 160°C pressurized water temperature controller with high pressure pump.

The Gramixo DBK continuous batch gravimetric dosing unit

XD 10 high performance mini-dryer

Outside, it will be possible to visit Moretto’s 40-ton articulated lorry, “Moretto in Motion”, a laboratory of ideas, which contains the latest news and innovations from the Italian company. This exclusive area is dedicated to the most demanding customers and professional Moretto staff will be happy to welcome visitors with a glass of Italian prosecco, a beer or a cup of espresso coffee.

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OMSO SPA BOOTH 4B44
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COMERIO ERCOLE - A RELIABLE PARTNER FOR INDUSTRIAL PROJECTS SINCE 1885

THE CHALLENGES OF THE FOURTH INDUSTRIAL REVOLUTION

IN ADDITION TO AN INVESTMENT OF APPROXIMATELY 1.2 MILLION EURO FOR THE EXPANSION OF ITS TECHNICAL DEPARTMENT, COMERIO ERCOLE IS ENGAGED IN A TRAINING PLAN AND RECRUITMENT FOR THE ENGINEERING DEPARTMENT TO FACE THE CHALLENGES OF INDUSTRY 4.0. IN THE MEANTIME, IT IS READY TO PRESENT A NEW "GIANT" 7-METRE CALENDER TO THE PROCESSORS

In a highly competitive environment, the Italian machinery manufacturer Comerio Ercole, wellknown for the reliability of its solutions, a feature that has always distinguished the company, strongly believes in the future. As proof of this, the company is now glad to present:

- a new important project, part of its Industry 4.0 strategy, involving the expansion of the company technical offices in Busto Arsizio/Castellanza, started recently;
- the construction of a "giant" calender unit for plastics processing, equipped with an operating 6800-mm roll, for an important European group.

Furthermore, the opening, just last year, of the new Comerio Ercole laboratories, where tailored research activities will be carried out as part of a number of specific R&D services, was the result of a major strategical investment by the company to face the challenges lying ahead.

In general, the data on July 30, 2016 show a total turnover of 44.9 million euro and an increase of 6.6% over the same period last

year. In addition, an important "backlog" at the end of July is confirming a projected turnover of over 65 million euro at the end of 2016, representing a substantial percentage increase.
The company participates in all the most important fairs worldwide and, obviously, it takes part in K 2016 trade fair in Düsseldorf (stand F21, hall 16), the most important international exhibition for processing machines for the plastics and rubber industry. In particular, during the exhibition Comerio Ercole is presenting:
1) a new revolutionary "devulcanization" process developed for rubber scrap, allowing materials to be converted into raw material after usage - trade name: Devulc;
2) a new calendering and embossing system for high-speed plastic materials with an innovative electric control solution adapted to ensure a better control, with a substantial reduction in energy costs - trade name: Lamifilm;
3) an innovative networked control system, completely remote controlled over the Internet, one of the first real industrial applications of Industry 4.0, for the cutting of rubber scraps during calendering - trade name: Edgetrack;
4) as an integration to the hydraulic control systems for roll gap adjustment for increasingly more precise and controlled applications - already part of the company's product range under the Hydrogap and Hydronip trade names - an additional package, the new Hydrosafe, for the automatic management and safe control of all movements to avoid possible interference between the mechanical units.

THE "GIANT" 7-METRE CALENDER

As a result of a synergistic effort involving the company as a whole and its skills, Comerio Ercole has recently sealed a deal with an European group for the construction of an impressive "giant" 3-roll high temperature calender with a 6800-mm roll working face.
This "giant" calender is conceived for the production of innovative articles, obtained from thermoplastic materials, also recycled, for thermal/acoustic insulation applications. No doubt it is one of the biggest machines in the world for roll size, made of special forged steel, featuring mono-block design and high process temperature (up to 260°C).
To ensure the perfect fluid distribution, the roll bodies are designed and manufactured by Comerio Ercole with peripheral drilling technology in order to achieve a maximum delta temperature in the process range equal to ±1°C. The technical solution adopted by the manufacturer in this project is patented under the trademark Rollblock Plus for special internal geometry, and under the trademark Hydrogap for the hydraulic positioning system, which guarantees maximum thickness precision of the processing material.
The relationship with the customer has been further strengthened following a particular research and development contract to widen all the calender performance characteristics and applications, even with test sessions at Comerio Ercole R&D internal laboratory.

The CEO Riccardo Comerio (fourth from left) and the technical staff at Comerio Ercole show the real length - 6.8 metres - of a cylinder of the new "giant" calender

COMERIO ERCOLE INVESTS 1.2 MILLION EUROS IN INDUSTRY 4.0

A new major expansion project involving the engineering department has started in the south wing of Comerio Ercole headquarters in Busto Arsizio/Castellanza (near Varese, Italy). The project, supported by a strategic investment of about 1.2 million euros, is linked to the development and engineering of new products and services within the Industry 4.0 concept.
The Italian manufacturer is already providing its customer with new interesting accessories and IOT (Internet Of Things), web-based services allowing a better management of all Comerio Ercole industrial machines. Young engineers are being recruited and a training plan for existing technicians at Comerio Ercole is almost complete. The opening ceremony of the new engineering department dedicated to Industry 4.0 is scheduled for the early part of 2017. ■

www.comercole.it

The drawing for the technical department expansion at Comerio Ercole

ROTOR DRYERS AND MORE

FROM PADUA TO THE WORLD, IN LESS THAN A DECADE

VISMEC IS AN ITALIAN COMPANY THAT OPERATES IN THE FIELD OF THE CONSTRUCTION OF AUXILLARY EQUIPMENT FOR THE PLASTIC PROCESSING, WHILE IT IS A RELATIVELY YOUNG COMPANY, BUT IT DISTINGUISHES ITSELF IN TERMS OF ITS ONGOING GROWTH AND EXPANSION. FOREIGN MARKETS ACCOUNTING FOR OVER 50% OF THE TURNOVER

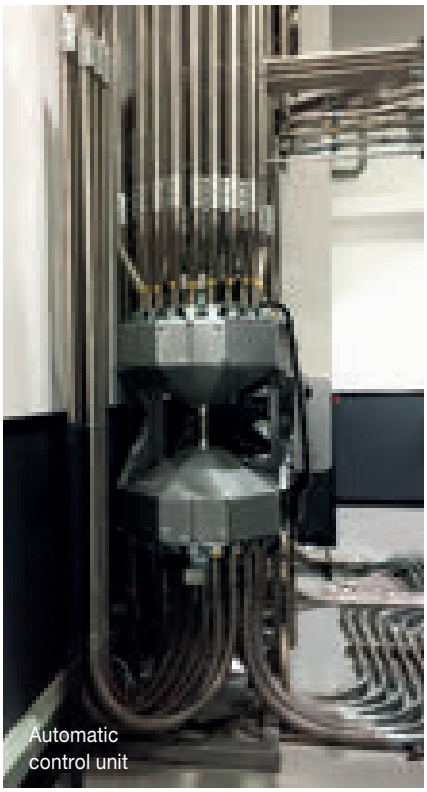
The Italian company Vismec is based in Camposampiero, near Padua, and after less than ten years in operation it has managed to acquire a leading standing on the European plastics processing market. This expansion has taken it beyond continental borders, and it today competes with some of the leading movers and shakers in the field, having gained significant market shares at a global level. The sales manager Carlo Bonaventura and the technical director Federico Critelli, tell us about its short, yet intense history.

FIRSTLY LET'S BRIEFLY INTRODUCE THE COMPANY: WHEN, AND WITH WHAT PRIMARY AIMS WAS VISMEC FOUNDED?

"Vismec was established in 2007, as a result of our idea to create a company specialized in the manufacturing of plastic processing equipment, and in only a few years the company has achieved a reputation as one of the leading European manufacturers of rotor dryers, having no less than 7,000 systems installed on the market", begins Carlo Bonaventura. "The company has grown constantly year on year since 2007, and 2015 proved particularly successful with a growth of 40%, a trend which would also appear to be confirmed for 2016, given the results of the first half year.

Vismec places all its know-how and technical experience at the disposal of processors day in/ day out. We are constantly tuned to market requirements so that we are able to offer ad hoc products to meeting changing market needs, that are the result of ongoing research, in which we have invested right from the beginning, in order to develop advanced solutions, to be able to compete on a par with some of the more long-standing iconic companies of our sector.

Over half of our turnover comes from foreign sales, thanks to a dense sales network that covers the whole world, and thanks also to the work of its branch in Seul and its warehouse operations in Dubai, and a sales strategy which focuses on innovation, competitiveness and a highly extensive range. This has enabled us to become a preferential partner of some of the leading companies in the automotive, consumer, and medical electronics fields".



Automatic control unit

COULD YOU GIVE US AN INSIGHT INTO THE VISMECT PRODUCT RANGE, AND EXPLAIN THE MOST RELEVANT TECHNICAL FEATURES?

"Vismec originated as a producer of rotor dryers for plastic granules, although in recent years, thanks to its decade of experience it has clearly become specialized in the field of centralized conveyors", states Federico Critelli. "Our core business consists in the vast range of absorption dryers: from the smallest Dryer DP 14, that is normally used for technical applications for output rates of less than 2 kg/hour, to the DP 3500 Dryer, with an output rate of 2400 kg/hour. They can be used with a wide choice of materials with a temperature range of between 55 and 180°C.

All the machines boast flexible and modular configurations, which means that the operator can increase the number of hoppers at any time, forming individual units or centralized systems, which can be fully enlarged at a future date. This assures low engineering costs and the perfect performance of the entire system.

Our dryers also enjoy a top ranking in terms of energy saving which is equivalent to 40%, they operate at low regeneration temperatures and they are complete with a mechanism that is capable of monitoring the production of dried material, by means of automatic air flow regulation, also protecting it from any risk of oxidation and over-drying. We are particularly attentive to the quality of the actual drying and material treatments that we provide, whilst at the same time always taking care of the individual needs of each client.

Our dryer range can be divided into four application categories. The DP and DW models being suitable for standard injection moulding, as they do not require water or compressed air, they are fitted with maintenance-friendly filters, to assure the required dew point.

While the Vispet series is specifically for the moulding of PET preforms, and boasts excellent performance in terms of energy savings, capable of assuring an energy consumption level of 72 W per kg of dried material.

While the Visbio series is dedicated to the injection moulding of polymers and is available in the more compact DP 14 version, right up to the DP 1200 designed for materials that require low temperature treatment (between 35 and 50°C). It has an air/air heat exchanger, which applied before the heating chamber acts to lower the temperature and allows the air to reach the desired temperature after passing through the heating chamber, before proceeding through the hopper.

While the Vismed range is dedicated to the pharmaceutical and medical sector, and is again available from the more compact DP 14 up to the DP 250. These machines being particularly suitable for clean room applications, thanks to components specifically developed for operation in sterile environments.

The special machines in the Vispet, Visbio and Vismed ranges, however all have the same characteristics and operating features of the standard series.

The Vismec feeder line is continually evolving and is distinguished by virtue of its centralized filters which, thanks to their special form, reduce the amount of cleaning operations necessary on them by up to 10 times. While as concerns receivers, we have a range made of solid stainless steel with a capacity of between 2 and 160 litres for granules and flakes (also available in glass version). These machines also boasting component positioning flexibility and it can reach a maximum temperature of 180°C.

Our extensive range of products is completed with the Vismec automatic control unit. It is capable of treating the entire range of plastics, and features a special blocking system that avoids any kind of contamination or pressure loss, making the machine especially suitable for low speed conveyor systems".

WHAT SERVICES DO YOU OFFER, OTHER THAN PRODUCTS?

Bonaventura continues: "The primary company objective is customer satisfaction, and we have an ongoing commitment to research in order to assure leading innovation and the development of advanced technology for the best results, the greatest degree of energy saving and maximum competitiveness. Our company is capable of offering solutions that guarantee maximum quality, production optimization, and thanks to the use of a special analysis instrument, a drying curve that drastically reduces the scrap rate.

We also act as consultants and designers, and we work closely with the client right from the beginning in order to explore and develop the most innovative and advantageous solutions. Our installation service is undertaken by highly skilled personnel; we also offer a global after-sales assistance and maintenance service, essential to guarantee the best results from each individual installation; we also provide energy audits conducted by auditors that are specifically trained to undertake analytical studies and to propose advanced solutions, efficiency and energy savings being essential aspects in order to be sure of the optimum efficiency of both machines and processing".

25 and 50 litre receivers

Double DR4 filter with spare blower

WHAT NOVELTIES WILL YOU BE PRESENTING AT THE K 2016?

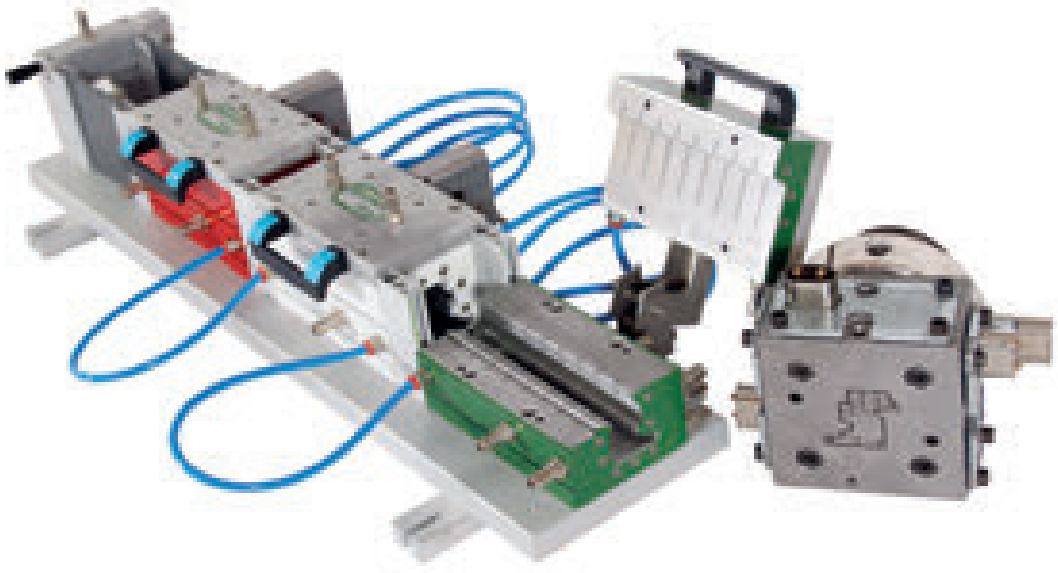
Critelli concludes: "We will be present at the German trade fair at stand F28, hall 11, and we shall be presenting a new monitoring system for material being conveyed. It can be installed either on the hopper itself or directly on the press and its winning features are: real time measurement of the exact amount of transported material; calculation and memorization of the material loaded by the receiver for any future analysis; ability to act as an accumulator, constantly monitoring the values set by the operator.

We shall also be presenting our monitoring system, compatible with Windows, Android and iOS operating systems and capable of real time production monitoring. The collected data can also be saved in a Microsoft SQL database so that it can be tracked for any future quality checks". ■

www.vismec.com

EXTRUSION EQUIPMENT

THE ADVANTAGE OF BEING "SMALL"



WE COMMEND SMALL ENTERPRISES THAT MANAGE TO KEEP PACE WITH THE GIANTS. THEN AGAIN, THE GIANTS AREN'T THAT GIANT. BUT COURAGE REWARDS ANYONE WHO FACES FORCES MUCH GREATER THAN THEMSELVES

BY **GIROLAMO DAGOSTINO**

Creativity and innovation, along with the right balance of courage and a pinch of madness, are just what is needed to manoeuvre through a production context where everyone seems to be joining forces and large groups dominate the market. But the advantage of being "small", of having the size of a small-medium enterprise along with a bit of craft, is that it is helpful when it comes to moving around with more agility and flexibility, without having to redefine structural equilibrium or production, and doing so relatively quickly. A company that knows this well is Eprotech, based in Lonate Ceppino near Varese (Italy), which has more than fifty years' experience working with tools for extrusion using the know-how handed down by Pio Oleotti. Today the company offers an alternative to major groups, particularly those based in Germany or Austria, which normally turn down work orders that fall short of certain quantities, and which do not often stray from their standard, consolidated production lines.

History and continuity over time, with the addition of commercial endeavours and product innovation, are some of the ingredients characteristic of Eprotech's approach to its key market of dies for doors, windows and plastic profiles. But this is not all. It also provides a series of services for upgrading tools and machinery for already established extrusion systems, which have sometimes been in operation for a number of years, but which the plastic processor still wants to use. And the more state-of-the-art the upgrade, the more the service is appreciated.

INHERITING THE PAST AND LOOKING TO THE FUTURE

Today, Eprotech is headed by the second generation of owners, with Sergio Oleotti acting as technical director and customer relations manager, and Luciano Valtulini in the role of CEO and sales director. They are continuing the work begun in 1955 by the company Pio Oleotti in the field of extrusion equipment. In addition to its product range, today, as mentioned, the company restores lines and machinery for extrusion. The company was established in 2010, but it was built on a solid foundation of technical know-how and customer relations dating back to the years of economic boom in Italy leading up to the early 1980s when, though it was not formally constituted as an industrial group, many very cohesive synergies were developed to group together the small and medium sized entrepreneurial realities operating in the context of plastic extrusion, representing the entire processing pipeline.

"There was work for everyone and everyone could get on with their own work", Sergio Oleotti remembers. These ties did not flow into something more structured and long lasting, but gave life to interesting collaboration with some big Italian companies, though only in an informal way. Therefore, Eprotech had to move forward blazing its own trail independently, redefining and reinventing itself continuously; a role which Italian SMEs are as a rule quite comfortable doing. "We are an alternative to a large group and, because recently - with the economic crisis - larger investments have not been made in our sector, we work on the two, three, four or five tools we are strongest and most competitive with", Sergio Oleotti adds.

The question of synergy with other companies - better defined as operators on a very similar market, as opposed to competitors - is important and fragile even for Eprotech. This point comes up without fail every time Italian small and medium enterprises describe their market and their business vision. Securing agreements that are lasting over time is difficult for reasons that substantially have to do with a

Cross-section of one of the many dies made by Eprotech

certain degree of distrust and individualism typical of Italians. Some major commercial collaborations still pivot to a large extent on human relationships and handshakes, and which assume the inexorable trust typical of a friendship as their foundation. In short, it appears that to collaborate in a commercial sense and relatively well-structured manner over time, a relationship first needs to be established which, even if not quite the same as a true friendship, it is very similar to one. The human factor seems to be vital for Italian companies.

Today, Eprotech produces tools and accessories for extrusion lines used for the most diverse applications in PVC production. The outlet markets are, without distinction, foreign - generating approximately 60% of revenues and divided between EU and non-EU countries (South America, Argentina, Russia, to name just a few) - and the Italian market, which generates the remaining 40%. We need to take into consideration, however, the fact that most sales in Italy come through orders from manufacturers of extrusions lines who install Eprotech equipment on machinery which, with all probability, will end up overseas. This is also by virtue of those friendly relationships that arise as business relationships practical for both parties: the machinery manufacturer and supplier of tools downstream. "Today, unfortunately, no companies in Italy produce PVC window profiles, because we are already too late. In Germany, there are already at a crisis saturation point, while we have not yet begun. All PVC windows that we see installed in Italy are made with profiles extruded overseas, imported and assembled in Italy", Sergio Oleotti confirms.

In addition to Italian small and medium enterprises being nimble and vivacious, they often offer an opportunity to establish a certain level of dialogue with the customer, who is not at risk of getting overlooked by the typical long-winded approach of a large group. In Eprotech, the customer has the advantage of a direct relationship with whoever is selling the equipment and with the technical management. We are not saying anything new if we say that salesmen "stolen" from technical management normally have an edge over pure salesmen. Often at Eprotech, it is the same person: Sergio Oleotti. There is therefore no middle man, no agent, but a direct relationship with the tool maker, the recipient of the investment. "The advantage of being a small or medium size enterprise is enormous: the customer has direct contact with the technical director, but also the salesman, and flexibility. We work only to specifications, every tool is a prototype, we can construct custom tools to suit the customer's needs, and therefore we do not impose our "standard" products on anyone. And today, since the crisis has had the greatest impact on the large-order rather than the special order sector, we are not feeling the effects of the crisis itself", Oleotti adds.

Sergio Oleotti, technical director and customer relations manager, in front of the extrusion line installed at Eprotech for testing the different tools the company makes

I SELL YOU A NEW TOOL AND, IN THE MEANTIME, I WILL UPGRADE YOUR OLD TOOLS

Eprotech has made the upgrade of extrusion tools a strategic and practical service, an added value in its sales approach. A choice that has met with approval in the form of market demand, to the point that company revenue is generated more or less equally at the rate of new tool sales and upgrades of used tools.

"We are working with companies who are reducing costs and seeking at the same time to increase productivity, without increasing the number of machines and employees. No machine manufacturers buy back used equipment. We do. We buy back old machines, we evaluate them - so the customer gets a return on their investment - and we sell a replacement with greater hourly production capacity, more suited to actual needs and new production plans. We exchange the machine and, moreover, when our technicians do the start up for the new tools orders, we also fix the old machinery", Sergio Oleotti says.

THE VALUE OF WASTE AND AN EYE ON THE ENVIRONMENT

A reflection of Eprotech's agility manoeuvring in fields that are relatively different, one of its new projects involves combining reclaimed and virgin materials through a process of co-extrusion. The company supplies tools for producing profiles using different percentages of virgin and recycled material without distinction, reducing the cost of manufacturing by 28%. The use of reclaimed material in combination with virgin materials is strategic and practical in today's world, where it is imperative to cut costs and find new niche markets. The plastic processing segment, for some time now, has experimented with the use of recycled materials, and the presence of reclaimed polymer material has become very common, even in a complex context like packaging for the food industry.

The world of "secondary materials" (namely reclaimed materials) presents a number of positive aspects, including care for the environment, sustainability, environmentally friendly practices, all synonyms for a business approach that boosts a company's image. In this context, Eprotech has developed another technology worthy of note that regards the use of polyolefin mix, that "awkward" portion derived from differentiated waste collection which until recently had a sole destination - the landfill. In collaboration with other extruder manufacturers for compounds, the Italian company has developed a specific technology for producing extrusion tools for so-called "plasmix", and establishes itself amongst the few industrial realities that can supply everything needed to process this material.

In 2011, together with Icma San Giorgio, TPM, Polytechnic of Milan and Itia-CNR, Eprotech won an EU tender (called Ecoimpatto) dealing with extrusion and the co-extrusion of technical profiles using "plasmix".

Given Eprotech's confidence on foreign markets, participation at international fairs - sometimes "teaming up" in a collective participation organized by Assocomaplast - is now consolidated practice for the company. Argenplas in Buenos Aires, Interplastica in Moscow, Plast in Milan and K in Düsseldorf are just some of the trade shows it participates at. The company, in fact, is present at K 2016 (stand C07, hall 1), where visitors can find out more about the company's latest innovations directly from Sergio Oleotti.

www.eprotechsrl.com

PVC RECYCLING... BUT NOT ONLY THAT

A NEW ERA IN MELT FILTRATION

Twin screw extrusion line for PVC recycling with Fimic RAS 400 automatic filter

2016 IS THE YEAR OF RESEARCH AND DEVELOPMENT FOR FIMIC. OBVIOUSLY, RESEARCH WAS AIMED TO IMPROVE FILTRATION TECHNOLOGY. IN FACT, IN 2016, THE ITALIAN MANUFACTURER OF FILTRATION SYSTEMS HAS FOCUSED ITS WORK AND EFFORTS ON THIS PRINCIPLE AND IS NOW READY TO LAUNCH ITS NOVELTIES AT THE K SHOW IN DÜSSELDORF

Last year, while continuing activities on its usual applications - LDPE, HDPE and PP, which have made Fimic renowned in the recycling field - the company also developed two other automatic self-cleaning filters, aimed to improve the quality of recycled materials. Also, Fimic focused on the processing of a particular material, PVC.

Electric cables have always been particularly difficult to sort out and recycle, not only for the characteristics of the material itself, which is very easy to degrade and needs careful processing, but also for the high level of contamination. Not only high percentages of copper and aluminium, but also rubber and other non-melt plastics make cables a tough challenge that many have undertaken without much success.

With the help of a known extruder manufacturer, leader in the processing of flexible PVC, but also thanks to the collaboration of a customer, who worked on this project for over four years, Fimic has finally been able to design, produce and test a RAS filter modified for PVC recycling.

This type of technology is based on collecting a high level of contamination inside a hollow blade holder, and to discharge it using a pre-set pressure. Because of the level of contamination, above 20% in the evaluation, the machine is set on the continuous mode so that the blade holder keeps scraping the stainless steel screen slowly and gradually accumulate the removed contamination. Thanks to the 150-micron laser screen and its higher open area (the screen ideal configuration was finally obtained after two years of testing), this plastic material, generally considered unmanageable, has been successfully processed and four different customers have confirmed its efficacy. The machine is now ready to be launched onto the market.

Waste discharge during PVC cable test. Collected contamination includes copper, aluminium, unmelted plastics and rubber

Although this Fimic filter has been slightly modified to process such material, its strength point remains the same: the quick cover opening and, consequently, the rapid screen change. Fifteen minutes (model RAS400) to fifty minutes (model RAS700) are very short times if compared to the (minimum) ninety minutes needed by other competing technologies. This is an important aspect if we consider that the screen could need changing every three days and that each line stop involves a loss in overall production.

For this reason, at a customer's production site, Fimic has installed a line configuration that enables the change of the screen without stopping the line production at all, using two filters in parallel and deviating valves. In this case, the customer has also decided to install two pelletizing lines, one after each of the Fimic filters. The line partially reduces the throughput when one of the screen is being changed, deviating the flow onto the other filter.

At a customer's site, Fimic has installed a line configuration that enables a screen change without stopping production at all, using two filters in parallel and deviating valves

THE NEW ERA MODEL

Thanks to the experience of the same customer and facing the challenge coming from a "difficult" material such as households post consumer waste, Fimic has been able to develop a new innovative model of filter, which filters twice in a sequence. We refer to the ERA model, presented for the first time at Plast 2015 exhibition, but only installed in 2016 and dedicated to processing heavily contaminated materials.

It is well known that plastics with a high level of contamination need two filtering stages in order to obtain a usable material. In the past, this involved a consistent capital investment, as this meant using two filters together with a melt pump or a shorter extruder in the middle. The ERA is formed by two inner filtration chambers, each equipping a screen with a different filtration level. The need for two filtering machines is therefore bypassed.

Fimic started to use laser screens 5 years ago with filtrations from 100 to 300 microns. A new drilling technology allows Fimic to produce thicker screens compared to the punched type ones. In fact, the thickness of punched screens (from 300 to 2000 microns) is the same of the hole diameter; so, smaller holes means finer screens, while this does not apply to laser screens.

As laser screens are also more expensive than punched ones, ERA will put most of the pressure on the passage in the first chamber. In this stage, it is possible to use a punched screen (for coarse filtration) so that the second passage, in the second chamber, featuring a laser screen (for fine filtration), is used to refine the quality of the material without being too heavy on the screen itself. For example, the first chamber could do 400 microns, while the second one 150 microns. In fact, the customer can adapt the screen type in whichever way he prefers.

The two chambers are independently managed as they remove the contamination by two separate discharge valves. When the set pressure is reached in the first chamber, the related valve will perform the discharge, after the blade holder has collected the contamination. The same will happen in the second chamber, which cycle will be based on the chamber pressure, measured independently by the PLC unit.

The quality of the material will be higher if compared to a single filtration stage, with a difference in pressure between the two chambers of around 15 bars. Fimic thinks it is important to keep a lower pressure when processing the material, in order to avoid gas formations and plastic degradation. The machine does not require higher process temperatures or any dedicated extruder type.

Both the RAS and ERA models can also use the backflushing feature, which enables filtration levels as low as 40 microns. Switching to this feature is a very simple operation to carry out. In fact, Fimic initial experience started with the backflushing function, while the scraping technology came later as further advancement. Unfortunately, backflushing has some limits, as it produces high losses during mesh cleaning (about twice as much when compared to the scraping technology) and it can operate only with low contamination levels.

In the ERA model, instead, heavy contaminations are removed in the first chamber, while using the backflushing system in the second one. In this way, Fimic can guarantee higher filtration quality, a longer life of the backflushing mesh, and minimal waste levels.

Therefore, the outcome is that Fimic can now deal with all materials, ensuring very high levels of filtration.

THE RESEARCH LAB AND THE NET FILTER

The Italian company has a laboratory 125 diameter extruder, on which it performs trials that finally enable the customer to make better decisions, based on deeper knowledge. Generally, a full day is dedicated to testing the customer material and discuss the results. Based on this, Fimic is able to tailor the machine to each customer's needs, which guarantees outstanding results.

In fact, the Fimic filters can be easily customized. The RAS model is manufactured in five different sizes (or diameters), based on the extruder size, offering a wider filtering area than most of the other existing technologies.

The recycling line recently installed in Spain for expanded polystyrene, on a Starlinger (Austria) extrusion line, is a clear example of product versatility. The Starlinger extruder recoSTAR dynamic 215 C-VAC, designed to process post-consumer unwashed fish boxes, is featuring an automatic Fimic RAS700 filter, to recycle up to 2800 kg/h of EPS, at 400-micron filtration. This extrusion line was presented at Starlinger's premises the first week of June and installed at the customer site in July this year. The RAS700 is one of the biggest filters on the market, thanks to its filtering area (3793 cm3). It allows users to filter high contamination levels with just a single screen.

At K 2016 (stand E28, hall 10), aware of the importance of working constantly to achieve higher quality levels, Fimic presents a third filter model, after 8 years of research and design. The NET filter uses a metal mesh for continuous (non-stop) filtration, and without any need to modify the extruder. After RAS and ERA, scraping and backflushing, the NET is now closing the loop!

www.fimic.it

The new ERA model is available at Fimic for trials

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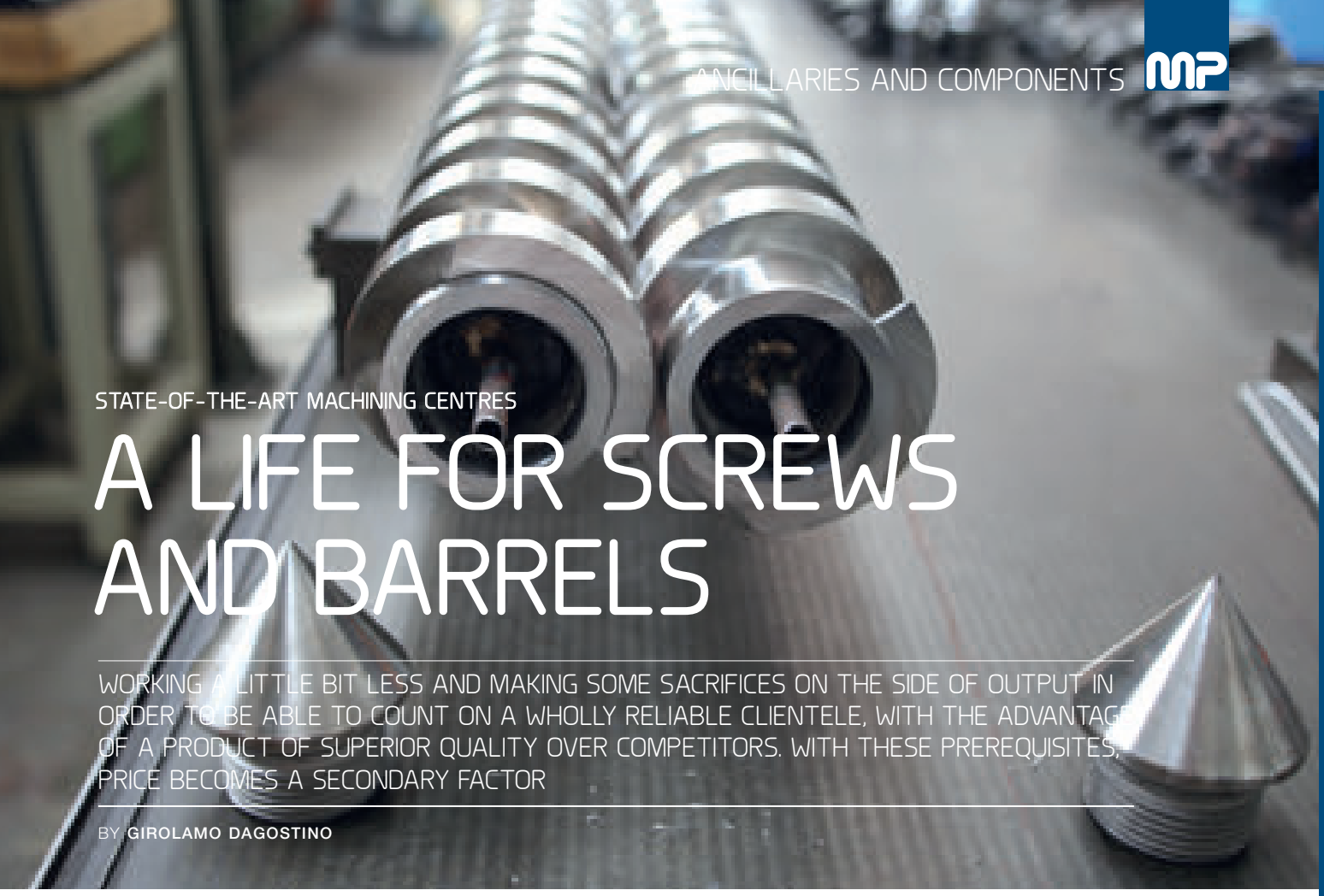

STATE-OF-THE-ART MACHINING CENTRES

A LIFE FOR SCREWS AND BARRELS

WORKING A LITTLE BIT LESS AND MAKING SOME SACRIFICES ON THE SIDE OF OUTPUT IN ORDER TO BE ABLE TO COUNT ON A WHOLLY RELIABLE CLIENTELE, WITH THE ADVANTAGE OF A PRODUCT OF SUPERIOR QUALITY OVER COMPETITORS. WITH THESE PREREQUISITES, PRICE BECOMES A SECONDARY FACTOR

BY **GIROLAMO DAGOSTINO**

Often it is said that the manufacturers of plastic processing components have a double commercial soul which, because of the nature of their product, will meet the needs of both system manufacturer and processors. The former use the component to integrate their production systems destined for plastics processors, while the latter install the component directly on their processing machinery.

This double soul belongs to MAST, a company based in Como (Italy) which in 2017 will celebrate 50 years in operation in the production of screws and barrels for the plastics extrusion sector. A business reality which for the sixth consecutive year has increased its revenues, testimony to the efficacy of its commercial and product strategy.

At the helm of the company, Carlo and Marco Arioli are the second generation owners. "We are working for the third generation", Carlo points out, and they are determined to provide continuity for their work which has over time earned its space, especially on the Italian market, at the same time being true to its history and continuously innovating its working methods. From this point of view, at a time when exports are significant and continue to be an anchor for many companies, MAST is an exception to the rule, as 75% of its revenue comes is generated in Italy.

In reality, when the client is a system manufacturer, they often fit a number of screws and barrels made by MAST on processing lines that are destined to end up on foreign markets; therefore, in a certain sense, part of the success of Italian-made systems on the overseas market goes to MAST. Its customers, whether system manufacturers or plastics processors, work primarily for the compound sector, using co-rotating single and twin screw extruders. The latter today represent the company's main market, but it is also working on projects involving new biodegradable materials.

Screw elements for co-rotating twin screw extruders

MATERIALS ARE CHANGING, WE ARE CHANGING

The years of work spanning two generations have brought experience that has, over time, had to adapt to the use of new techniques and materials. In particular, Carlo Arioli points out, it is now widespread practice to process highly filled and reinforced materials, with decreasing resin content and an increasing high abrasive component.

Today, sintering materials are used not only for the construction of milling inserts, but also for the complex mechanical parts which may include, in this case, plasticisation screws. Traditional steels, vulnerable to the aggression of fillers, lose validity and this is why, at this point, screw manufacturers have a new problem to face, namely identifying processing parameters and technical solutions for processing increasingly less conventional steel, with respect for - obviously - specifications from the extrusion line manufacturer, in this case the client.

"The biggest technological innovations are made on our metalworking machines, so we therefore always have a number of cutting machine tools that are constantly upgraded to meet the state-of-the-art. We also need to keep pace in the way we work with plasticisation screws in terms of precision and being able to meet demands, which are continually becoming more complicated. Even for profiles for single screw extruders, which might appear

Barrel and screw profiles for co-rotating twin screw extruders

simpler than others to construct", Carlo Arioli points out.
The machining centres installed at MAST are state-of-the-art: two Weingartner (the second purchased last year), particularly well suited for milling screws, which MAST managers are very proud of, and which represent the true added value of the finished product. "100% of mechanical processes for making the screws and barrels are carried out here, in house. The system manufacturer provides the drawings and specifications... then we have to find the way to process these materials, which all pose significant processing problems. For the future, we need to continue to invest in our machine tools", Arioli adds.

WHEN COMMUNICATION IS A "MAST"

While historic technical know-how and continual innovation in the methods used to process materials are vital factors for the present and the future of the company, communication is essential in today's world. Breaking out of the mould means getting on the internet and marketing the company brand online.
These concepts are very clear at MAST and, in this regard, a new website recently went live (although it isn't yet complete, Carlo Arioli points out), showing all products, services and the potential offered by the company, the direction of which is particularly satisfying. As for Facebook, Linkedin and Twitter, for the moment there are no plans because there are not considered to be "normal channels for our type of market, for our business", Arioli says. There is time.
Also in the context of marketing, in 2017 MAST will host an open house to celebrate 50 years in business and open the doors to everyone who is interested, and also show off the shed dating back to the early twentieth century, a former textile factory, the current home of the company's offices.
Communication also means attending the largest trade shows. MAST regularly participates at Plast in Milan and at K in Düsseldorf, and is deciding whether to take part at Fakuma in Friedrichshafen too. Events where there is an effective possibility of meeting almost all of its customers and when it has an opportunity to lay the foundations for broadening its portfolio of potential buyers. MAST's plasticisation screws and barrels are on display at K in Düsseldorf (stand B17, hall 11), from October 19 to 26, 2016.
Expansion on foreign markets is another objective on the company's agenda, reflecting a certain curiosity and desire to build potential commercial relationships beyond the EU, in addition to existing commercial ties with France, Austria and Turkey. The presence at an international fair by participating at the many collective stands organised by Assocomaplast might also be an interesting prospect. If we consider that (in a period like the present time, which certainly does not stand out as being a thriving market) 75% of MAST revenues come from sales in Italy, what might happen if the company could achieve a similar result on foreign markets, too?
Another interesting market for Carlo and Marco Arioli regards possible collaboration and synergy with other Italian companies, to the tune of "strength in numbers!" A topic that is always a delicate one, especially for companies operating in Italy. Trust, overcoming mistrust, the ability to share objectives, are the Achilles heel, the reason Italians often get envious of their German competitors who (it is no secret) know how to turn out for grand occasions - but also for individual commercial opportunities - united and tight. That said, Italian companies do want to team up; they just need to get some concepts right. As Carlo Arioli points out: "While these are extremely difficult topics, we can in the meantime begin to change our current mentality. Certain companies, for example, should not be called competitors, but simply operators who are working on a very similar market".

Continuity, professionalism, ability to perceive market changes, the desire to invest and positive feedback from clients: these are the main points the MAST company philosophy is based on, according to owners Carlo and Marco Arioli

QUALITY WITHOUT CERTIFICATION EXISTS

Following true to the best Italian tradition, in the context of technology, rather than being an objective, quality is a brand. The "tailor-made" approach at MAST entails a greater sacrifice, a warehouse that is virtually non-existent, but the reward is customer loyalty, confirming the importance that the customer attributes to the relationship with a supplier of essential components, such as screws and barrels for extruders. Carlo Arioli makes sure he points out how the client portfolio came over time to contain major names. Companies who adopt honest and perceptible commercial behaviour, starting with regular payments, which, frankly, is not to be underestimated. Another essential element in consolidated relationships with clients is the absence of outstanding payments. "Zero complaints", in fact, is another motto that for the most part suits MAST.
At the basis of this reciprocal supplier-client confidence lies a decision the company made that might be considered counter-productive in an age when image is everything: it has given up on ISO 9001 quality certificate, after years of pursuing it. The decision was made for purely commercial reasons and especially because, as things stand now, from a marketing point of view, this certification brought no added value in terms of image, as the latter had already been earned in the field by facts rather than a label which, at the end of the day, is a statement of intent that still needs to be proven. "We gave up on the certification, but we did not give up on the mentality of working with the same high standards we had before the certification, and that we are maintaining now. The market is demonstrating that we were right", Carlo Arioli concludes. As if to say, quality does not need certificates.

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From the left: Elisabetta Colombo and her husband Duilio Corbellini (president of Affilor), from whom Riccardo Marchini (current CEO and sales director) and Gianluca Marchini (technical and production director) took over the company in 2014

BLADES FOR GRINDING AND SHREDDING

A NEW LIFE FOR PLASTIC MATERIALS: THE TOOLS OF THE TRADE

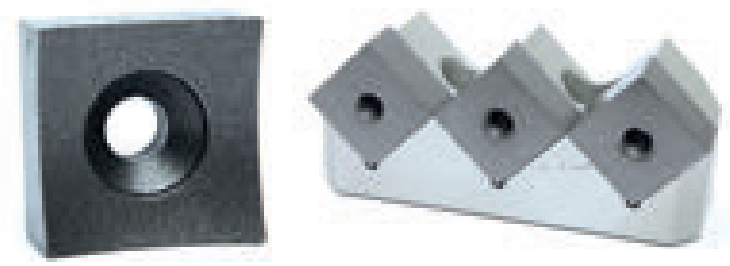
EXPERIENCE AND KNOW-HOW, ACQUIRED OVER MANY YEARS, EFFECTIVE COMMUNICATION, AND THE POWER OF INTERNET. THESE, ACCORDING TO AFFILOR, ARE THE KEY INGREDIENTS FOR ATTRACTING ATTENTION AND PROVIDING A DYNAMIC RESPONSE TO MARKET DEMANDS

BY **GIROLAMO DAGOSTINO**

It is always a pleasure when young entrepreneurs, representing the new generation, believe in ensuring continuity between the old and the new, seeing it as a true corporate mission. This is an attitude displayed by two brothers, Riccardo and Gianluca Marchini, who now lead Affilor (stand A71, hall 9 at K 2016), an industrial operation in Nerviano (near Milan), which, since 1933 and over the space of three generations, has been manufacturing blades and accessories for the grinding and shredding of plastic materials.

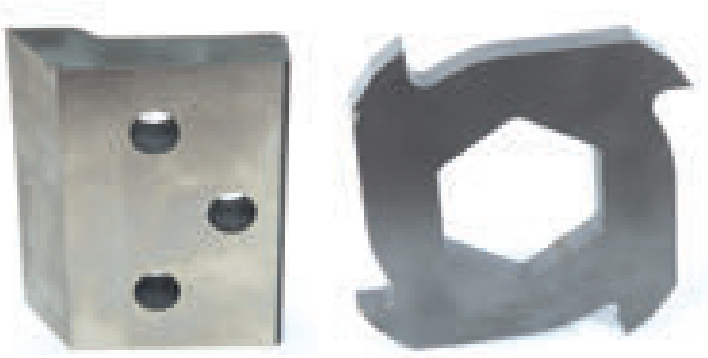
Riccardo and Gianluca Marchini's sense of gratitude towards president Duilio Corbellini and his wife Elisabetta Colombo, from whom they took over the company in 2014, is underlined by the fact that they have embraced a "modus operandi" in which great pride is taken in providing excellent customer care. One of the main features of the relationship that Affilor establishes with its customers is its compliance with agreed deadlines, which, according to the two executives, contributes to the quality of the company's activity. Thanks to Affilor's well-stocked warehouse, which keeps production and delivery times to a minimum, customers never have to wait longer than three weeks. In line with the best tradition, items are produced to specific designs, according to the customer's requirements and exploiting a wealth of knowledge and expertise that has been accumulated over the years. Everything is done in-house, where the blade production cycle is closely monitored, step by step.

"The strength of Affilor is that we are able to go to a user whose plant is down and solve his problem rapidly, because either we already have the material in our warehouse, or we can, in any case, arrange a delivery within 7-10 days: we can meet customer requirements as regards delivery times and also satisfy those with very precise, detailed orders, as we are able to count on our own dedicated technical department", points out Riccardo Marchini. Adopting an approach that seemingly goes against the idea that it is good to keep warehouse stocks to a minimum in order to optimize production costs, Affilor always has plenty of material in stock. This is an approach that works because the sales network is solid, characterized by a level of continuity that is



Blades suitable for plastics and for other materials

confirmed year after year; this, in turn, is an indication that the company is producing items that, in all probability, will be purchased by established customers, which remain constantly loyal to it. Affilor is also planning investments in new machines that will cut production times and further improve the production department's responses to all the orders it receives.
"We have just purchased a furnace so as to be able to cure materials internally, and this will allow us to speed up our production. That is what we are planning as regards thermal treatments. But we won't be stopping there", Marchini explains.



Some of the blades produced by Affilor for the size reduction of plastic materials

FIRST THE MANUFACTURER SELLS THE MACHINE, AND THEN AFFILOR...

The Italian company produce blades for the processing of plastic materials, both for manufacturers of grinding mills, shredders and recycling lines, and also for the end users of these machines and lines who simply want replacement parts. End users, in particular, appreciate rapid responses to their requests and also find that they are able to optimize their investment by turning to the blade manufacturer directly, thereby benefitting from lower prices than those usually applied by the system manufacturer, and also, often, from the quality of the materials used, which guarantee the parts a long life.
Affilor's clientele thus comprises processors and recyclers of plastic materials, and also machinery manufacturers. The presence, in certain markets, of manufacturers of machinery for the recovery of plastics is, for Affilor, a useful point of reference. Indeed, wherever these machinery manufacturers are to be found, there is a good chance that its products will attract attention and interest. The mills and other size reduction units that equip the facilities of recyclers, and anyone else that uses production waste as by-products, will periodically need maintenance operations, including blade sharpening, and these operators will eventually have to purchase new blades and replacement parts. And that is where Affilor comes in.
"We will not sell our products before the machine itself has been sold. We come in at a later stage. First the mill, shredder and recycling plant manufacturers sell their machines, and only then do we come along with our replacement parts", reiterates Riccardo Marchini.
Being so heavily involved with the recycling world and with the re-use of plastic materials, there is an important "sustainability" side to the activity of Affilor, whose blades contribute, indirectly, to the recovery of plastic materials – materials that, once adequately ground or shred, can be fed back into the production cycle as byproducts, or classed as plastic waste and recycled to obtain secondary raw materials (SRMs).
This affinity with the recycling sector means that Ecomondo - an exhibition devoted to the exploitation of waste, held annually in Rimini - is one date on the exhibition calendar that the company never misses. Other important events chosen by Affilor to promote its products - these are both European, but they have global prominence, are IFAT and K, held in Munich and Düsseldorf respectively. Even though the Italian market accounts for the majority of the company's sales, for some years now there have also been foreign processors among its customers.
In recent years, precisely in order to broaden its commercial horizons and, specifically, to increase its presence on the foreign markets, Affilor had been investing in promotional activities. In addition to the site visits that the company's two executives already make personally, the Marchini brothers are now considering the possibility of taking part in other important fairs too, as a means of sounding out potential new markets of interest.

THE EFFECTIVENESS OF COMMUNICATING VIA INTERNET

As we have said, Affilor's working approach is rooted in company tradition. Counterbalancing this, on the promotions side, it is a great believer in the value of modern technologies as a means of conveying messages about brand and products. Affilor sees Internet as an indispensable way of reaching customers, especially those beyond national borders.
The use of language appropriate to the target audience is another way of seeking to ensure effective communication. These, together with other aspects, are things that the Lombardy-based company has kept very much in mind in embarking on an overhaul of its website and in seeking to harness the power of the Web.
"Our idea was to modify our website to make it simpler, dividing it into sections devoted to the various product categories: wood, plastic, rubber etc.; in this way, the visitor only needs to click on the sector of interest to see the names of the manufacturers for which, indirectly or directly, we make blades. A few photos and some useful information are elements that can drive demand and prompt someone to get in touch", explains Gianluca Marchini. "Internet is power. The words used must be simple and immediate, because the typical user will only type in the key word "blades". In my view, for our particular field, that of replacement parts, the future is all about investing in Internet: it is a way of covering a vast range of different types of customer, from the one equipped with a single mill to the customer boasting a plant worth 5 million euros. Our range of possible clients is very wide and Internet is the only means of finding them all!", concludes Marchini.
The thoughts and remarks of these two executives reflect a modern view of the economy, according to which the power of communication should be harnessed to the full. It is an approach that works well in certain market sectors, like this particular one, that lend themselves to these commercial practices. It certainly allows considerable time savings, cost cutting and also the possibility of reaching a larger number of customers. We are not talking about e-commerce, with all the drawbacks associated with online selling, but about the simpler and more effective side of Internet, which, more easily than other channels, allows users to gain leverage from rapid communication and offers a convenient virtual platform for creating a product image. When these factors are associated with a concrete presence in the "fora" (like, indeed, the leading international fairs) where it is possible to actually meet customers, and where those interested can talk to company representatives face to face, and actually see the products available, then the outcome can be very interesting indeed. ■

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NEWS

High-tech robots at K 2016

Handling moulded products of all types

At K 2016, an IML automation system with 3-axis robot model XW-1000 VI is mounted on a Toshiba EC 130 SXII injection moulding machine

In 2013 Star Automation Europe took part in the success of the K 2013 show and K 2013 was a success for Star Automation Europe too. Again, this year the company wants to be an active player at this important event, not only satisfying its long-standing customers but also gaining the confidence of new ones, counting on what has made of Star a worldwide-known brand: quality and reliability over time. The best proof for that is an MHY-900 3-axis servo robot displayed at the company's stand, made in 1982 and still perfectly functioning after 34 years of tough work, always in the service of the customer. This is what Star does best.

In addition, Star also means innovation, research and development. Its range of products keeps evolving and this year the company is proud to present the new robots of the XW-VI series. These servo-driven three-axis robots are the ideal solution for the handling of all moulded products. For example, the top-entry XW-1400M VI robot is among the best sellers of Star thanks to its robust structure and its first-rate performance.

This year, thanks to the co-operation with Toshiba Machine, Star is proud to exhibit an IML automation system with top-entry robot. All this in a single automation cell and only one IMM/robot system to manage:

- robot model XW-1000 VI Stec 520, strokes X= 2000; Y = 1130; Z=1000 mm;
- IMM: Toshiba EC 130 SXII;
- mould: Brovè Plastics;
- product: Frisbee, 1 cavity;
- round flat label;
- cycle time: 16 seconds.

The XW-VI series is managed by a colour touch screen pendant either with preloaded operative modes, i.e. a series of pre-set modes selectable from the pendant, or with free programming feature which gives the user total freedom. Amongst the main advantages of this range are the Stec-520 controller, the very short take-out times, the 5-axis CNC versions and the low energy and air consumption levels.

Besides the robot of the XW-VI series, Star Automation Europe is also exhibiting an ES-II robot, with high-speed option, as well as an IML automation system which represents the feather in Star's cap as far as innovation and reliability are concerned. The top-entry ES-II robot is known worldwide for its excellent value for money. The model on show, the ES-1000HII, is the high-speed version and has a powerful motor on the vertical axis.

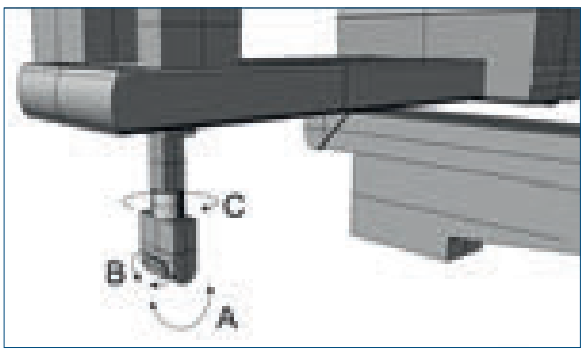
The location of the booth is the same as at the last K shows, booth G74, hall 11. However, this time it boasts a different look and features three suspended axes hanging from the ceiling. The stand is visible from any part of the hall and is certainly a catchy and recognisable feature for Star.

The Eins arm tooling specialist's sector keeps delivering tremendous results and great satisfaction to Star. For this reason, during the K 2016 show the Eins cabinet is brought to the limelight at the centre of the stand, clearly visible and accessible by all visitors.

Finally, Star is also present on the Ekin Makine stand C58, hall 13, where Moritech Robot Teknolojileri Otomasyon San.Ve Tic., the company's distributor for Turkey, is showing a 24-cavity cutlery automation system in co-operation with Ekin Makine. A Star high-speed Fx-1000 robot takes out the moulded forks from a 270-ton Ekin IMM. A 6-axis Scara robot then transfers the packets to the packaging machine. ■

www.star-europe.com

The servo head option consists of two additional AC servomotors which allow rotation around the vertical axis and around the product overturning axis. Operating range: A = 0-188° and rotation around C axis = 0-320°



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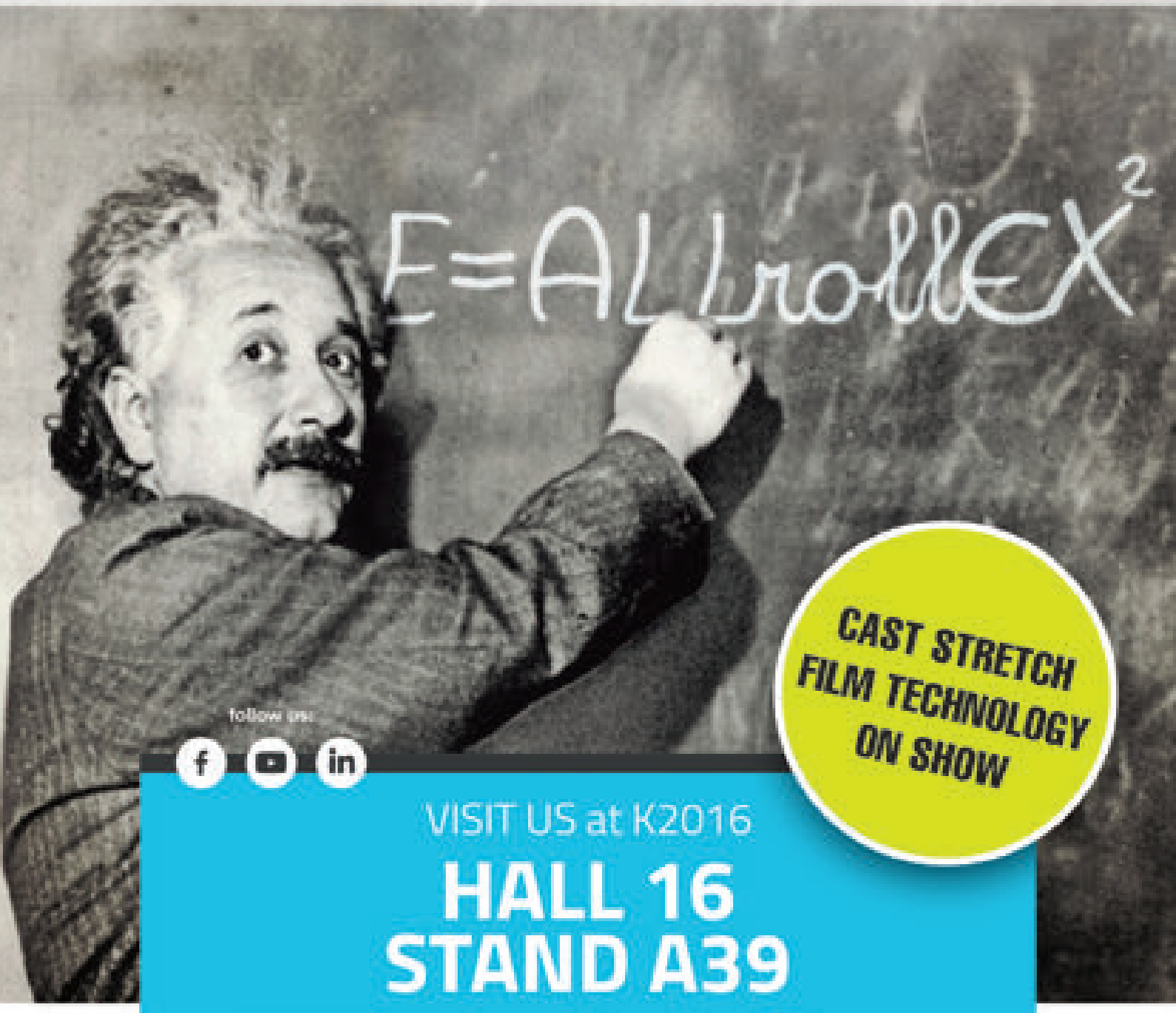

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NEWS

Combining the benefits of injection moulding and extrusion

World premiere of FDU Technology

The motto “One stop for higher productivity” summarises Haidlmair’s offer. The Austrian tool manufacturer, technology and market leader in injection moulds for beverage crates, storage and logistics containers, pallets and pallet boxes, as well as recycling containers presents its options and novelties to the audience at this year’s K show in Düsseldorf, in booth E49, hall 12.

The Haidlmair experts start out with the customer’s product idea and will optimise the mould with state-of-the-art simulation software (Haidlmair Advanced Simulations) before it enters production. The unique state-of-the-art Haidlmair machine range makes it possible to manufacture moulds of more than 80 tons. Most of the moulds produced are sampled in the in-house technical centre and delivered in perfect coordination with the customer. After delivery, the Haidlmair International Service ensures that the moulds are perfectly serviced. If an acute service need arises, service employees will be at the customer’s site without delay. This ensures maximum productivity and offers the moulder an all-round carefree package. The presentation of these productivity benefits is at the focus of the trade fair appearance of the company.

The world premiere of the “soft wrinkle bag” is the highlight of the competence presentation of Haidlmair at K 2016

The great highlight of this year’s Haidlmair exhibition is, however, the world premiere of a new injection-moulding technology, a development of Haidlmair Advanced Technologies. It is an FDU (Flat Die Unit). The FDU is the first great development synergy project of two Austrian companies of the group - Haidlmair in Nußbach and EMO in Micheldorf. It combines the two technologies of injection moulding (Haidlmair know-how) and extrusion (EMO know-how). The FDU is an open hot-runner nozzle system that is installed in the injection mould. A distribution channel in the nozzle has been modified accordingly and projected onto a flat nozzle. The material flow therefore differs from the conventional injection moulding procedure.

A meat box mould with FDU is running at Stork IMM’s booth

The plastic flows evenly into the cavity through a long, narrow gap. The FDU combines the benefits of injection moulding and extrusion. The shear in the nozzle is reduced by up to half, which in turn considerably reduces shear warmth. In some materials, such as polypropylene, a lower injection pressure can be achieved as well. The homogeneous output of the material due to the slot geometry expands the process window for injection, holding pressure and cooling. All of these items permit a drastic reduction of the cycle time, which in turn has the corresponding positive effect on productivity.

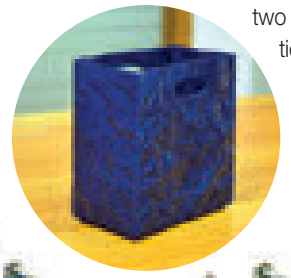
The new technology is shown in action at three machine manufacturer stands:

• Milacron (booth C06, hall 15) - The German/American manufacturer of complete systems for plastics processing produces a “miniature wrinkle box”, equipped with the FDU technology. The mould is filled via 2 injection units. The wrinkle box is particularly attractive thanks to its new, reproducible colour design.

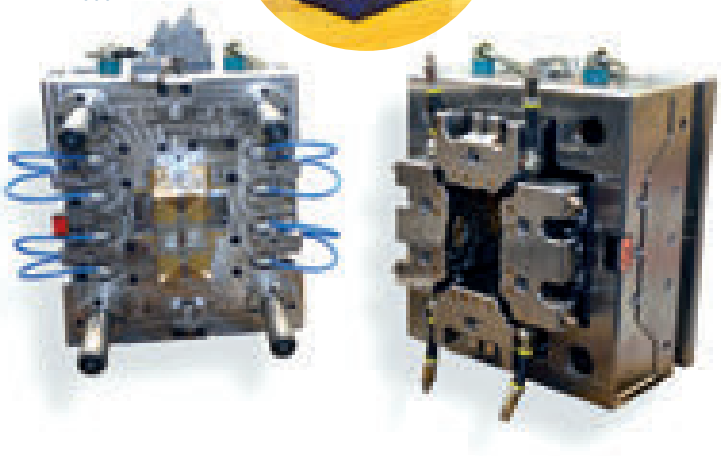
• Stork IMM (booth D72, hall 13) - The Dutch manufacturer of injection moulding systems produces a standard meat box with a Haidlmair high-performance mould equipped with FDU; it is characterised by its particularly short cycle time.

• Wittmann Battenfeld (booth D22, hall 16) - The stand of this company offers a special highlight. The “soft wrinkle bag” has its world premiere there. It is the latest member of the wrinkle box family that Haidlmair presented for the first time at K 2010. It is characterised by a new design and particularly by the TPE material that gives the bag its soft feel. The benefits of FDU technology are outstandingly evident here as well. ■

www.haidlmair.at



Production of the mini wrinkle box (with FDU installed in the mould) runs at the Milacron’s booth



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NEWS

Pipe belling, bending, cutting and automatic packaging

A high level of automation

Market competitiveness is now coming to depend, more and more, on the end of the extrusion line, because the production capacity of the extruder is directly proportional to the capacity of the end-of-the line machines to process the different quantities and types of pipes produced. When producing short pipe lengths (for PP pipes, for example), efficient functioning of the saw, belling machine and automatic packaging plant (when present) is crucial. For many years, IPM invested a great deal in this direction, trying to make the end of the line better and better performing, so as to allow the production capacity of the extruder to be exploited to the full, while maintaining the high quality of the pipe produced.

Reaffirming this concept, at K 2016 in Düsseldorf (booth D58, hall 16) the Italian company IPM presents a range of technologically advanced and fully automatic machines. First of all, a high-speed electronic socketing machine of the Rieber System type (socket with contemporaneous insertion of the gasket), covered by two patents. This machine automatically tests each pipe produced, rejecting any socket that is nonconforming or defective. Thanks to a further patented technology, IPM is able to ensure the repeatability of the production cycle, and consequently the production in series of the socket type that has been set, self-adjusting whenever, for whatever reason, there are changes in the conditions initially set, e.g., changes in the external temperature (winter/summer), damage to heating resistances, pipe cooling, and so on.

To control the machine, Siemens latest generation touchscreen panels, offering the best performances in terms of speed and visual indicators of efficiency and energy consumption, provide an immediate snapshot of the performance of the machine. In addition, following the advent of broadband and exploiting the increasing use of company networks (wired or wireless), a teleservice system makes it easier to interface with customers from all over the world.

In addition, at K 2016, IPM exhibits a line for PP pipes, comprising a cutting group and socketing machine, that encapsulates years of research and development in this field. Depending on the pipe to be produced, IPM is able to design and automate the entire process, by inserting robots and specific machines, capable of producing the type of packaging that the customer requires, even involving very diverse technologies, but always with the purpose of reducing, if not eliminating, the presence of the operator on the extrusion line, limiting his intervention to the withdrawal of the pallets that have been formed and packed, ready for storage.

Since a human eye check on the suitability of extruded pipes is no longer expected, the company has developed and patented a device for testing, directly in line, each individual pipe's quality and compliance with tolerances (a patented innovation, presented at the fair). With more automation, it also decreases rejection rates, thanks to the precision of the controls, that are no longer only random checks. The result is that, using these automated packaging plants, processors can today pack up to 1500 pipes/hour, continuously, 24 hours a day.

Finally, visitors to the IPM booth can see a CT63 automatic high production pipe bending machine (up to about 800 bends/hour). At the fair, it simultaneously produces four bends per cycle, with a 90° angle, socketed at both ends. The product obtained is extremely precise, and shows no crushing, ovalization or warping. The machine also offers the possibility of obtaining bends with different angles, up to 90°. IPM is currently one of the few manufacturers worldwide producing the largest range of these plants, able to bend and socket pipes with diameters of between 16 mm and 500 mm, with multiple bending radiuses and angles. ■

www.ipm-italy.it

Corrugated pipe belling in line with BA 500 INJ

The Italian manufacturer IPM is also able to produce autonomous packaging plants, simultaneously managing pipes of different diameters and up to six different lengths, coming from four extrusion lines; it is able to manage and automatically pack up to 3,600 pipes per hour

Innovations in ancillary equipment

Dosing, drying and cooling

Interior of the new production plant of Plastic Systems

At the K Show 2016 (booth H39, hall 11), the Italian manufacturer Plastic Systems introduces new product development for each application of material processing technology, as well as for temperature conditioning moulding and refrigeration machines. Attention has been given in particular to dosing technology, with the DGB series (high precision gravimetric blender) and the DG series (loss-in-weight gravimetric blenders). New filterless receivers or receivers with integrated dust extraction system, and receivers for powder conveying are also introduced.

In the drying field, the company is showcasing a DWS high efficiency multi-hopper system (equipped with a device to control productivity & energy consumption for each material individually), and the DAC series (mini compressed air dryers with molecular sieves), ideal for low-throughput & high quality moulding.

All these devices have been developed in line with the new 4.0 industrial communication standard, allowing not only the interconnection between Plastic Systems equipment and MES (Manufacturing Execution System), but also for interfacing machines & peripheral ancillaries.

The evolved control provides all the relevant information, such as material availability, various parameters related to the material, and system energy consumption to optimize the overall system performance according to real processor needs. Continuous data processing together with a customer management software allows attentive assistance and a safer use of the entire system.

For the new affiliate to the group, Blauwer, the K 2016 fair is an opportunity to introduce itself on the thermo-refrigeration market. The company designs, develops and sells high efficiency thermodynamic machines able to treat fluids such as water and air for industrial processes like: cooling, heating, simultaneous heating and cooling, and air drying.

Its technical innovations contribute to increasing the advantages for a higher environmental sustainability. The Blauwer product lines are: Chill*Wer* industrial water chillers; Dry*Wer* dry-cooler with adiabatic system; Hydro*Wer* pumping groups for water circulation; Recu*Wer* dryers with heat recovery; Recu*Wer* dryers with high efficiency regeneration; high temperature heating pumps for water (Aqua*Wer* series) & for air (Heat*Wer* series). ■

www.plasticsystems.it

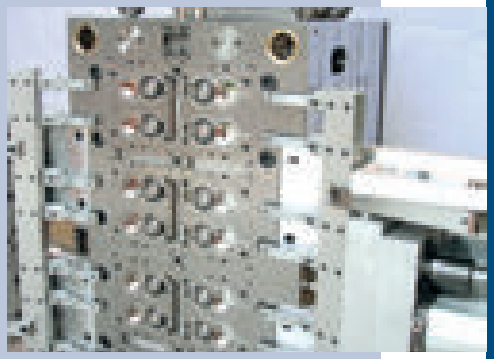
High quality moulds for caps and closures

Provide processors with innovation, flexibility and service

To anticipate market needs and keep up with the times, Giurgola Stampi (booth A23, hall 2 at K 2016) has continually worked to provide processors with innovation, expertise, flexibility, service and, of course, high quality moulds. Primary emphasis has been placed on the moulders' production requirements. Although it remains a mouldmaker, the company feels it is necessary to expand its competence from the co-design of the processor product to the complete quality control of the moulded part, through the whole testing phase and pre-production, with the aim to provide processors with an answer to any need and a solution to any problem.

The company takes part in several fairs with the aim of strengthening its presence in the European and international market, from both productive and commercial points of view. It shows the latest technologies applied to moulds for closures, destined to sectors such as food and beverage, personal care, body care, pharmaceutical and medical, all of great interest to the company.

Caps are displayed with all their possible combinations, with unscrewing thread, pull thread, seals, flip top with and without closing of the lid in the injection moulding machine, mono, bi and three colour, realized using rotating and tilting technologies in the mould, completely designed and manufactured by the company to meet the needs that emerged from a particularly demanding processor.



A multi-cavity mould from Giurgola Stampi

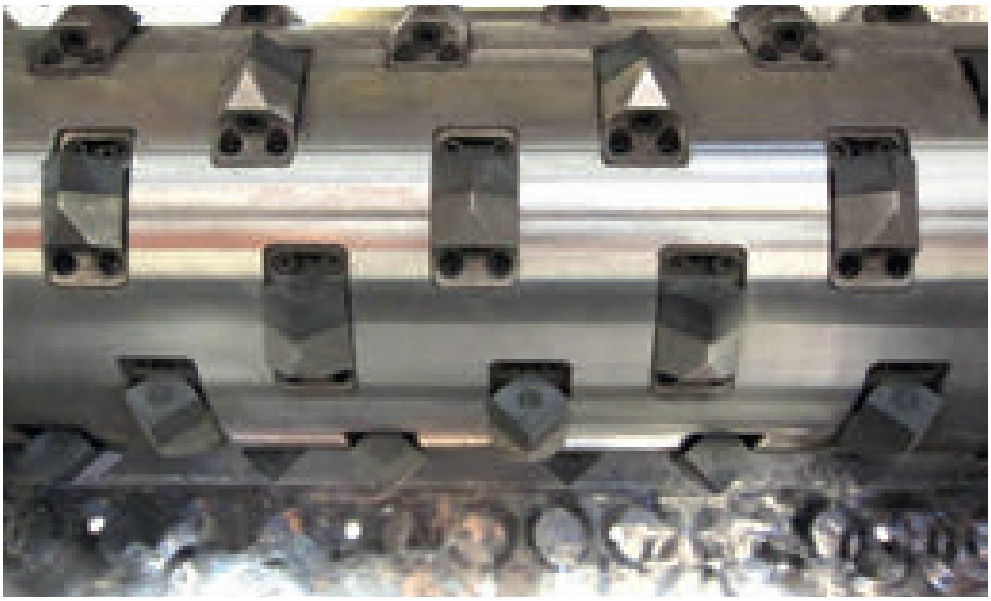
Equipment constantly updated and managed by qualified and dynamic people allows the company to expand its commercial presence in Europe and around the world, looking for continuous growth opportunities in a changing socio-economic reality. The manufacturer is trying to move the boundaries in mechanics using inventiveness and imagination to create solutions and pass on to processors its capability of being a reliable partner. ■

www.giurgolastampi.com

NEWS

Shredders and grinders

From stand-alone machines to complete systems



The core business of the Italian company Forrec (booth J46, hall 10, at K 2016) is the production of shredders and grinders for the processing of any form of solid waste, subsequently leading to the development of complete systems to transform various types of scraps coming from tyres, refrigerators and waste electrical and electronic equipment (WEEE) into valuable raw materials.

Forrec's stand-alone machines have always been top sellers for the business. These include single-shaft grinders as well as double-shaft and four-shaft shredders which not only comprise standard features but can also be customized according to the requirements of the specific customer. The low-rotation shredders enable high torque levels to be achieved with reduced energy consumption; the TQ series of four-shaft shredders feature an interchangeable shaft system and use wear-proofed grilles to achieve a drastic reduction in maintenance.

The company's single-shaft grinders are equipped with interchangeable rotor plates and, owing to the attention paid to the ratios between the number of rotations, type of blade and installed power, ensure high production levels even with reduced diameter grilles (approximately 30 mm), resulting in very low management costs. Meanwhile, rotating-blade granulators are offered in capacities of up to 2.5 tons per hour for grinding mixed plastic waste produced in injection moulding, extrusion, blow moulding and thermoforming.

Forrec has designed more than 80 models of shredders, grinders and granulators but its philosophy is always focused on customers, their needs, and the best solutions to solve their recycling issues. Besides the company's stand-alone machines, a significant share of Forrec's production is dedicated to complete installations. The tyres treatment system has always had an important role in the company business, but the WEEE recycling systems are now also in great demand. Forrec now has significant references all around the world for these kinds of installations and others such as municipal solid waste, RDF, wires, medical waste, metal scraps, plastics and industrial scraps.

Moreover, the Italian manufacturer has gained great experience in the production of conveyors, an industry to which the company pays attention, considering that a part of the design department is exclusively engaged in the construction and improvement of these products. Forrec has always invested time and resources in the improvement of the efficiency and quality of its machines and of the services that complete the plants and machines in their range of products. For this reason, after-sale service has always been considered a strategic area, constantly upgraded over the years.

All Forrec installations and machines are customized and adjusted to meet the different requirements according to the type of material to be processed and volumes per hour, as well as the dimensions of the customer buildings and power supply

www.forrec.eu

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from left to right:
Dr. Vittorino Loreto (Cielle Imballaggi SRL),
Enrico Vaggagna (Windmöller & Hölscher Group),
Dr. Corrado Loreto (Cielle Imballaggi SRL),
Dr. Luca Pennisi (Cielle Imballaggi SRL)

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The company is convinced that success can only be obtained by using the best technologies and knowhow available, without interruption of continuity.

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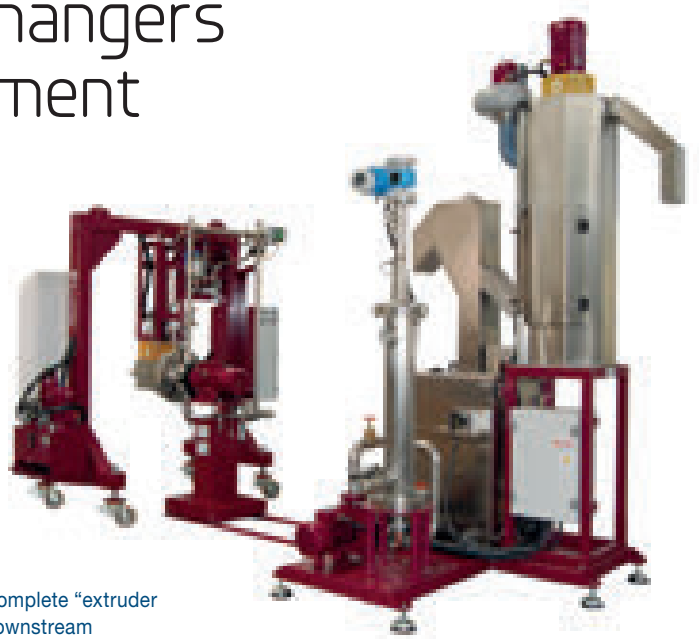
NEWS

Filtec at K 2016, together with PSI

The future of screen changers and downstream equipment



Complete “extruder downstream equipment” by Filtec

In every respect, the K Show (Düsseldorf, October 19-26) is the top and reference event in the world of plastics. Filtec started to exhibit there in 2004. Since then, every three years, the Italian company has taken part in every single edition of the trade fair with its novelties and technical innovations. But, more importantly, exhibitions are the best opportunity to meet face to face with the world sales force in order to get some feedback, compare different technical proposals by agents and their service engineers, and develop common strategies. Also this year, Filtec has its usual space in hall 9, booth E41.

Hall 9 is a kind of privileged location, where the Messe Düsseldorf organization gathers the booths of the main companies producing pelletizers, granulators, screen changers, drying centrifuges, and what is known as “extruder downstream equipment”. Booth E41, in particular, is always full of life and teeming with people interested in what will be installed in the production plants of the frontrunner companies in the field of plastics.

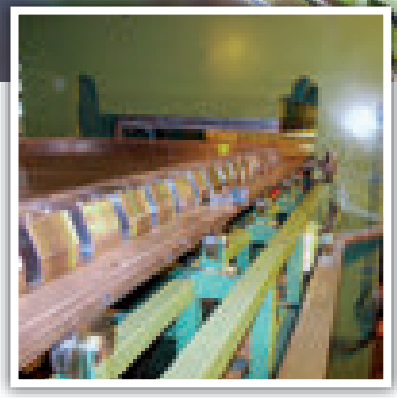
People from Filtec co-operate with important Italian and foreign companies; together with their partners, they have gained deep knowledge and broad experience in every kind of compound, masterbatch, recycling product, and special issue. For this reason, Filtec already introduced some of its strategic partners at Plast 2015 exhibition, in Milan. Since then its contacts and business relations strengthened. So, at K 2016 booth, PSI exhibits together with Filtec.

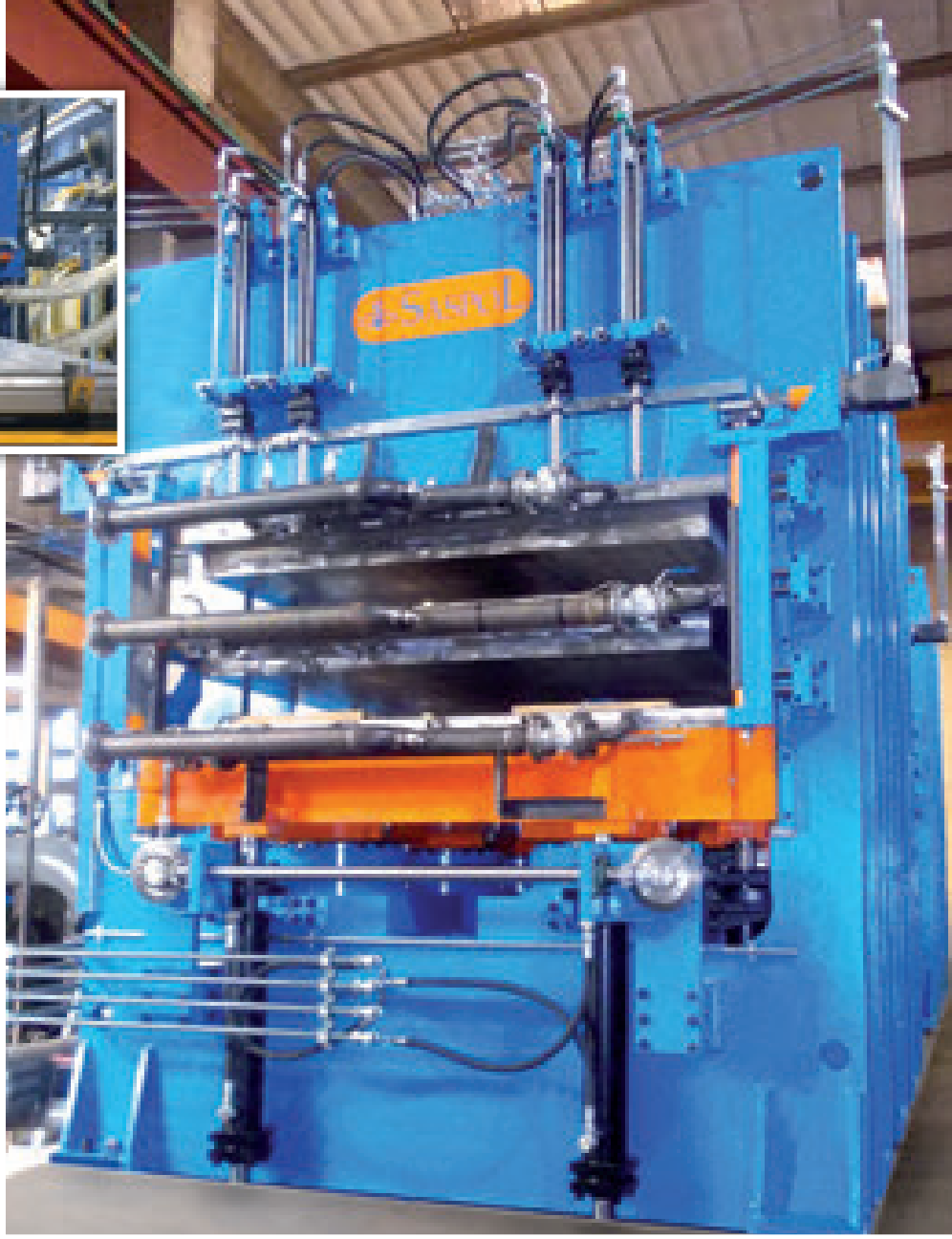
PSI-Polymer Systems Inc. is a leading US manufacturer of screen changers, extrusion gear pumps, and static mixers for polymers. All are offered either as stand-alone components or as complete engineered systems. With many years of experience in the field of plastics, PSI use leading technologies in design, engineering and process solutions. As a result, the equipment has a long life, even in the hardest operating conditions. The company was founded in 2000, but the staff members already have experience in key-positions in different primary companies in the field of polymers filtration, extrusion, and process control. All together, these people own more than 20 patents and combine more than 75 years of specific experience. PSI is still managed by its founders and owners.

This year, machines produced by PSI are also on show at the Filtec booth, together with two groups of machinery complete with Filtec cutting systems and PSI equipment. More precisely, a Filtec UW50 underwater pelletizer is mounted together with a PSI EGP76 gear pump, while a Filtec GRO500 watering pelletizer is mounted with a PSI CSC125BF screen changer. ■

www.filtec.it

Filtec and PSI exhibit together at the K Show 2016 at booth E41, hall 9. A screen changer by PSI is shown in the picture





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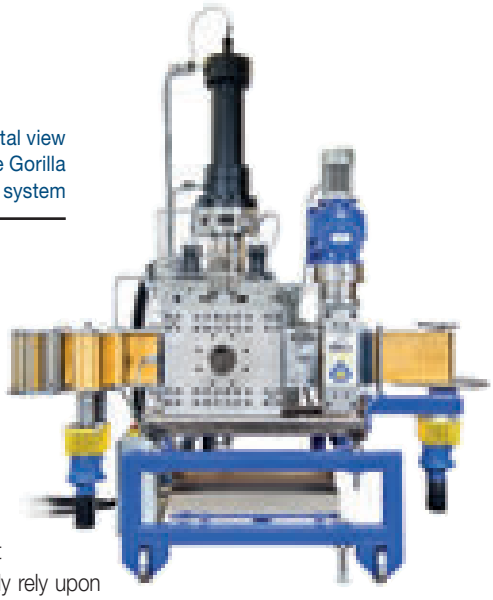


A frontal view of the Gorilla Belt system

NEWS

Gorilla Belt

Automatic screen changer for recycling

The production segment of screen changers has been increasingly marked towards recycling equipment for highly contaminated materials so that Gorilla Belt from Cofit (booth D24, hall 9, at K 2016) has gained a significant acceptance in this market over the last year. A forty-year expertise in this specific production field, strengthened by a number of patents, has made Cofit, the manufacturing company from Cerro Maggiore, near Milan (Italy), a synonym for screen changer. Laying its foundation in 1967 from an intuition about upcoming large-scale plastic material processing potential, Cofit aimed at the huge advantage deriving from filtration process evolution.

Analysing its strengths, the company flagship product enables an uninterrupted production. As a matter of fact, it does not involve extruder stop, thanks to an accumulator cylinder, while actual screen changing is carried out in about 15 seconds and interrupts the melt flow. It is worth highlighting that Gorilla started excellently. After its first installation in 2013 at a major Italian compounding company AD Compound, Cofit has received several requests from all over the world even if it has just entered the markets. The name Gorilla has been conceived to give the idea of strength: it is equipped with two wedge blocks, like two big hands, to hold the screen, while a motor downstream displaces the screen by pulling it.

As far as facts and figures and production strategies are concerned, the general manager Fabbri explained that a satisfying goal is the yearly production of twenty Gorilla Belt units, being Cofit reference customers both compound and reclaiming companies focusing on granules. This means Cofit main target customers usually rely upon complete washing systems: waste sources are the most different, being mainly post-consumer, highly polluted material coming from sorted waste collection, characterized by a strong presence of wood, sand, metal, paper, chemical compounds, inks etc.

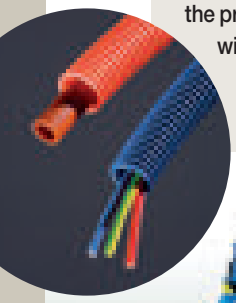
Gorilla is mainly offered in two different sizes, indeed different sub-sizes are available, according to accumulator cylinder dimensioning, whose production ranges from 500 to 3,000 kilograms, to give minimum data. As a matter of fact, it can satisfy any customer needs. For example, within the re-compound sector, production peaks of 4,000 kilograms can be reached, by adding a 10% calcium carbonate and thus increasing the specific weight. The company dares to say that an actual 3,000 kilograms of pure polymer can be reached as top production. The smaller size model reaches a 1,600-kg production, as confirmed by specific tests - and customers have confirmed the utmost satisfaction. Besides, the company wants to be competitive so it pays the utmost attention to cost minimization - actually, prices are lower than the average ones, indeed taking into account that a line requires a substantial investment.

www.cofit.com

Itib Machinery at K 2016

Vacuum forming system in modern corrugators

The range of corrugators manufactured by Itib Machinery allows the production of corrugated pipes. These range from small pipes with internal diameters starting from 4.5 mm to big pipes with outer diameters of up to 1200 mm. At the K 2016 show, where it is located at booth D37, in hall 15, Itib is drawing the attention of visitors to its corrugators for small pipes, showing a FMV15/70-110 model, along with a FV32/152. The first of these, thanks to a modular structure, which allows the chain length to be adjusted to the pipe length, avoiding scrap, and features a vacuum forming system and the possibility, locally, of changing speed and thus pipe thickness, is mostly intended for automotive applications. In fact, the trend in the automotive industry is to replace, whenever possible, metal pipe lines with corrugated pipes in thermoplastic materials boasting advanced mechanical and physical properties, composed of flexible corrugated sections, followed by smooth rigid ones. The second corrugator with 152 pairs of moulds is the longest of the F32 range. It also has a vacuum forming system and a high efficiency cooling system, which makes it possible to reach very high speeds with HDPE and PP electrical conduits. Moreover, the vacuum forming system allows in-line insertion of electrical cables and XPE or XPE/Al/XPE tubes inside the corrugated pipe. These applications are increasingly common in countries with high labour costs. At K 2016 the staff of Itib Machinery is happy to discuss with visitors other aspects of these corrugators and of the bigger ones that complete the range.



The FMV15/70-110 corrugator is mostly intended for pipes for automotive applications

www.itib-machinery.com

A new solution in mixing

Cooling more than eight batches per hour

The development and the optimization of the coolers of mixing plants is the latest innovation launched by Plas Mec (booth A60, hall 9, at K 2016) and has been welcomed with great interest. Thanks to the Italian manufacturer, today it is a straightforward task to cool more than 8 batches per hour of U-PVC from 120°C to 40°C. The new water circuit design increases cooling efficiency enabling a significant increase in the productivity of the cooler and, therefore, the mixing plant. The new cooling interspace can withstand a working pressure of 2.5 bar, a typical pressure of factory closed circuit chillers. This, in addition to increasing the efficiency of heat exchange, solves many critical issues typical of closed circuit chillers.
The Plas Mec technical team has developed this innovation through close collaboration with its customers and by systematically analyzing and comparing data in order to create new ideas and continuously innovate our products.
Furthermore, the company has recently renewed its testing room to allow its customers to perform a wider range of tests on PVC, powder coatings, bonding materials, masterbatches, WPCs and any other material suitable for mixing.
The room is equipped with the following plants: HC Combimix 300/1000 system, a combination of the TRM heating mixer and the high performance HEC horizontal cooler; TRL 13 laboratory mixers; a combined system with TRM heating mixer and RFV vertical cooler; overturning mixer with multiple configuration. In addition, a process control program has been developed, which allows the production cycle to be monitored and the result to be foreseen.
www.plasmec.it

Operating since 1967, Plas Mec owns an engineering & research department run by a team of highly specialized engineers, developing a wide range of mixing plants and complete mixing lines. About 95% of the company's systems are exported worldwide, with more than 5,600 machines installed at 1,800 customers

NEWS

From product design to manufacturing of injection moulds

A complete integrated solution for coffee capsules

Detail of the multi-cavity production mould for coffee capsules

Automation system developed by Gefit for coffee capsule production

It is a huge undertaking to take care of the entire production process of a new design, from the definition of each component's geometry through to the presentation of the final product, ready for the supermarket shelves. It is something that many companies dream of doing at least once in their lifetime, but very often it is a project that has to remain just an idea, due to the obvious difficulties involved - huge investments in terms of research and development, a tough time frame to be defined at the beginning of the project, tests to be repeated over and over again in order to find the right way, and so on.

Despite this, the steady growth of the company Gefit (booth A64, hall 13, at K 2016), now nearing its fiftieth birthday, is able to do just this – offer its customers complete systems, starting from co-operation in the development of the plastic product design and including the manufacturing of injection moulds, high-speed and quality assembly machines and vision inspection cells.

Take, for example, the important projects it has implemented for the complex and exciting market of coffee capsules. Thanks to the experience achieved in the different technical areas in which it has been operating since 1967, Gefit has designed, manufactured and delivered to its customers several complete lines for the production, assembly and quality control of these capsules, lines that have proved hugely successful in markets worldwide.

Since nothing ever happens by chance, a project like this always starts with in-depth mould flow analysis and quality inspections of the different materials to be used for manufacturing the pilot moulds; another primary and basic step is to collect and study the injection parameters, system reliability and performances of the product.

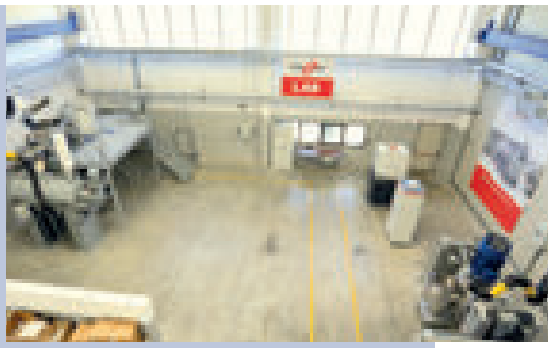
At that point, it is possible to enter the heart of the project, with the manufacturing of the multi-cavity production moulds, a stage often supported by GefVision, the vision inspection cell used in this specific segment to monitor the correct filling of the mould and check for any defects. GefLining is the platform designed by Gefit for the insertion and welding of the liner inside the coffee capsules, capable of reaching dizzying output levels, close to 90,000 pieces per hour. Finally, to definitively conclude the production and packaging process, the engineers of the Italian plant in Fubine created GefFill, a modern and practical platform for filling and closing the capsules, which at this point are ready for delivery.

In short, it is a complete integrated solution that, in the meantime, has already been successfully tested in the more traditional beverage market, particularly for the production of caps and closures for mineral water and soft drink bottles and cardboard containers for fruit juices. The offer of similar complete plants has pleased and fully satisfied the customers. ■

www.gefit.com

Promixon expands its premises

New test room for machines and materials



The new test room at Promixon

Thanks to the expansion of the production unit with the addition of a new shed of around 1,500 square metres, Promixon has now opened an in-house test room to offer customers even more comprehensive and personalised services. The new facility supports systems efficiency testing and real-time checking of blending results with the processors' production materials.

The test room is equipped with a Problend-TC/400/1200 hot/cold mixing plant comprising a TMX turbomixer and a CMX horizontal cooler, ideal for the production of rigid or plasticised PVC dry-blends, WPC, masterbatches, additives, and powders and for the bonding of powder coatings. The room also features a TRX-300 high-speed container mixer, ideal for the production of concentrated pigment masterbatches, pre-mixing and blending of powder coatings and engineering plastic compounds.

Promixon therefore invites all interested parties to schedule an appointment to fix the mixing trials with their own company products and test the technological innovations introduced on the mixing plants. The company also attends the K 2016 trade fair in Düsseldorf at booth H02 in hall 10, to showcase its latest improvements in mixing and to find the perfect solutions in order to obtain an increase in productivity for every processor. ■ www.promixon.com

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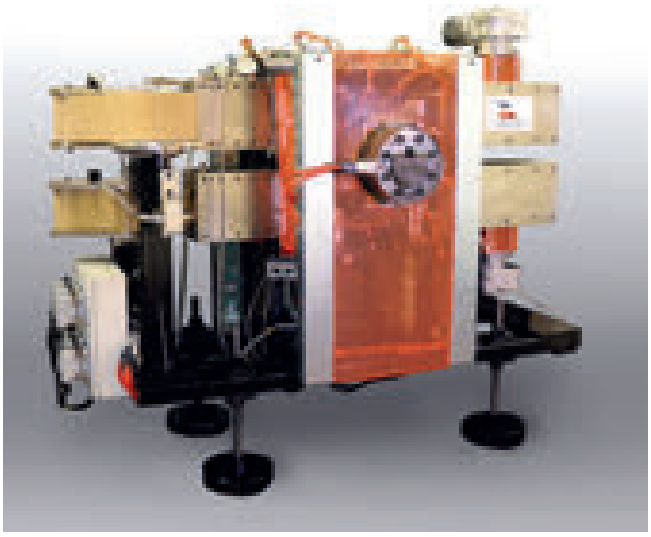
NEWS

Belt screen changer

The evolution of recycling



CM Evolution Plast is owned by the Prinzo family, which gained its expertise over more than 40 years of collaboration with companies in the plastics sector. It combined this experience with inventiveness, and tools that led to the Principe Evo belt screen changer

At K 2016 (booth D60, hall 16) the Italian company CM Evolution Plast presents Principe Evo, the automatic continuous-flow belt screen changer for plastic materials having a high percentage of contamination. This fully automatic belt screen changer does not need routine maintenance, and its constant flow means that it has to be seen to be believed. Principe Evo uses two revolutionary systems: EvoBlock and EvoPulling (both patent pending).

With this device CM Evolution Plast provides a series of advantages: practical productivity, savings and greater reliability. These benefits can be seen, experienced directly and evaluated by the customer, who can test it using their own materials at CM plants. The flow continuity, together with the system linearity, allows processing with low pressures and weighted variations to avoid any melt alteration. This offers the user unimaginable application possibilities.

Another distinguishing feature is its ease of use which is limited to one simple task – changing the tape rolls. The wield-free operation does not need any special equipment, and can be carried out during the normal execution of the production cycle. The life (in days) of a 100-metre roll depends on the degree of material contamination. CM Evolution Plast's work is defined by its testing, commissioning and after-sales service.

Principe Evo is designed to ensure trouble-free operation over time. The relationship that is created with the customer is consolidated with the implementation of the device, and is ongoing. Whatever the processor needs, CM Evolution Plast will have the spare parts and components required to provide timely maintenance.

The Principe Evo user can utilize its remote assistance service, which means that the customer can count on the manufacturer's support at any time and wherever he is located. The processor can decide to manage the product through selectors or a touch screen, and check the parameters through digital indicators or graphics displays. ■

www.cmevolutionplast.com

Gearboxes for extruder drive

Substantial investments in new production sites

The Italian leading manufacturer of gearboxes for extruder drive, Zambello Riduttori has just made substantial investments in two production sites (Magnago, near Milan, and Lendinara, near Rovigo, Italy) in order to achieve very important objectives so as to consolidate its leadership worldwide. Both production sites have been expanded, with an increase of around 65% of the total covered surface, which now take up nearly 20,000 square metres of the overall 100,000 square metre area.

The Italian company Zambello Riduttori has recently invested in two new production facilities, in Magnago (Milan) and Lendinara (Rovigo) to consolidate the company's leadership worldwide

In order to considerably increase production capacity and to further shorten delivery time, new CNC machinery, ensuring high precision and productivity, as well as other super- efficient equipment, such as the new massive automatic warehouse system that will revolutionize order processing for customers located all over the world, have been installed at the sites.

Over the last few years, remarkable results in terms of performance have been achieved, with the introduction of new products such as the gearboxes for twin screw extruders (both counter-rotating and co-rotating), now available also with torque density of the highest level.

Amongst the new products in the range are also the gearboxes for conical twin screw extruders. But the activity to widen the range, including additional sizes, is still going on. ■

www.zambello.it

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MOULDS FOR ROTOMOULDING

45 years of expertise and professionalism

This year Boca celebrates 45 years of activity. Based in San Pietro Mosezzo (Novara), 40 km west of Milan, Boca (booth G58, hall 3, at K 2016) has invested in human resources and technological development since 1971 in order to improve its skills in producing moulds for rotational moulding. A long process characterized by constant growth in terms of professionalism, quality, and services to its customers. Over the years, Boca has transformed itself by continuously adapting to the different market needs, moving on from craft modelling to become a leading manufacturer and designer of rotational moulds, exported all over the world.

Each individual activity is carried out, in-house, by qualified personnel, thus ensuring high quality and total control of the workflow. Boca services can be summarized as follows:

- design and projects by a young and dynamic technical department, backed by expert staff with proven experience and supported by 5x machines and last generation programs;
- Finite Element Method (FEM) to carry out linear and non-linear static and buckling analysis;
- reverse engineering on pre-existing products with no size restrictions; the acquired data can be remodelled using CAD programs;
- cast aluminium rotational moulds or worked CNC moulds;
- steel rotational moulds of any size and complexity; 3-mm thickness;
- composites patterns and moulds for composites (reinforced with fibreglass, carbon fibres, Kevlar etc.) of any size and complexity;
- moulds for thermoforming or thermoset processing.

An example of mould developed by Boca for rotational moulding

The materials used for making the mould may vary depending on the required use (prototype or regular supply moulds). A wide range of finishes and textures are available to complete the mould. Finally, Boca technicians can also run tests on the finished mould to verify the absence of any imperfections and full compliance with the customer's requirements. ■

www.bocarotomoulding.eu

Rotoflux Series G

Rotary joints for diathermic oil up to 340°C

A light but solid body, divided into two parts in order to optimise the assembly and maintenance and with a brand new stainless steel bellow. These are the main highlights of the G Series rotary joints

The dynamic Italian company Rotoflux has been producing rotary joints for over 20 years and has continuously grown until it has reached an important position among the manufacturers world leaders.

The complete range of rotary unions Rotoflux includes now the brand new G Series, developed for applications with diathermic oil up to a temperature of 340°C, in order to solve all security and duration issues caused by leakage. The rotating joint Rotoflux Series G stands for innovative technical solutions, high quality materials and attention to detail and it reaches the top level of the best production available up to now.

The rotary Rotoflux Series G is light but solid and it is made of phosphated steel, divided into two parts in order to optimise the assembly and maintenance. The clue of the G Series is the stainless steel bellow, developed by the R&D Rotoflux team. Combined with mechanical seals in flat contact surface, it ensures an excellent performance in all conditions, durability and high safety standards.

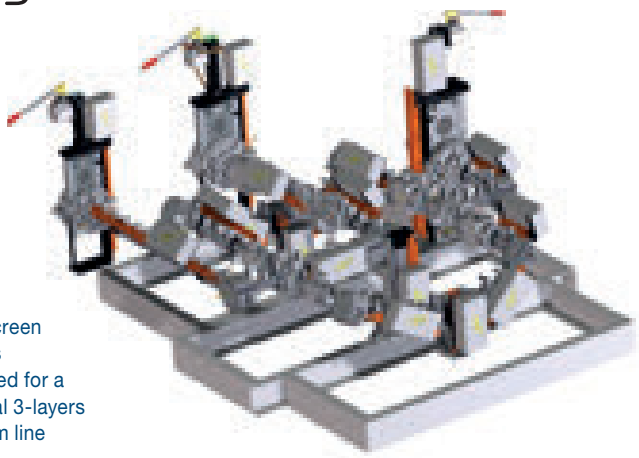
A microlapped carbographite seal, driven by a stainless steel bellows and by four positioning springs, works coupled with the flat surface of the shaft rotor, providing a constant tightness level over time.

Two graphite bushings, resistant to high temperatures, enable an optimal rotation of the stainless steel shaft whose inner end to the joint is thoroughly hardened and lapped.

The Italian manufacturer has always paid attention to the market trends and the new G Series is also available in sizes ¾ inches and 2 inches, configured with a threaded or flanged rotor shaft, with single or double passage, with stationary or rotating siphon. The performances with the maximum speed of rotation of 500 rev/min and a maximum pressure of 10 bar meet every requirement. ■

www.rotoflux.com

Solutions for compounders and multi-layer extrusion lines



BDMP screen changers engineered for a traditional 3-layers blown film line

K 2016 is widely acclaimed as being a special and unique opportunity to show own products in the plastics field. With this philosophy in mind, BD Plast presents a full range of highly customized screen changers and downstream equipment at booth D74, hall 9.

The BDLG simple manual ratchet type screen changer is displayed with a built-in elbow. This solution is particularly appreciated and integrated on multi-layer extrusion lines. Upon request, the elbow can be provided with a removable bushing allowing easy cleaning of the melt channel and extruder screw extraction through the screen changer.

The BDO FT hydraulic screen changer now comes in a new compact version with the cylinder in mid-lower position allowing a dramatic size reduction. Special care has been taken to protect electrical wiring that has been optimized by using fast connectors to the thermoregulation control board.

Furthermore, BDO FQ is displayed in a tailor made version having oval filtering area Ø 170 x 300 mm. This solution, specific for twin-screw extrusion lines and compounders, allows a perfect transition avoiding possible stagnation points. Special safety guards and protected wiring are available on this unit too.

Continuous flow filtration is possible with the BDOx2 double plate system coming with integral covers and a completely interchangeable sealing system. This sealing solution allows onsite service, minimizing costly downtime. The easy and simplified air venting grants perfect flow continuity even without melt pump when working polymers at very thin thickness.

BD Plast's traditional product range is completed by a melt pipe network and BDMP adapters engineered for a traditional 3-layer blown film line. These internally engineered components can be easily integrated with the company's screen changers and static filtration housings (mono or multi cartridge and leaf disc). In the last few years, BD Plast has delivered many complex turn-key solutions allowing OEM's to save substantial engineering costs.

Finally, a couple of products developed by the company long ago have been re-engineered. BDCF is a fast die changing system particularly suitable for profiles. This unit originates from BD Plast hydraulic screen changers and minimizes downtimes, and is in demand to replace the extrusion dies.

Last but not least, the BDVR melt flow non-return ball valve allows the polymer melt flow to run in the direction of extrusion only. If polymer counter pressure occurs, the ball moves backwards, immediately blocking the melt flow. Thanks to 3D modelling, the melt channel has been improved dramatically.

www.bdplast.com

NEWS

Since 1940

Infrared and UV solutions


UV Lamps
by Helios Italquartz

Helios Quartz Group (booth E60, hall 11, at K 2016) has been a family-owned company with two production plants, one in Italy (Helios Italquartz) and one in Switzerland (Helios Quartz Group), combined with distribution channels in the US, in South America and in Asia to become a major international supplier for quartz glass processing and the manufacturing of infrared emitters and ultraviolet lamps. Helios Quartz also produces specialized equipment for industrial, scientific, and medical applications. TÜV certified, Helios Quartz is a very flexible and dynamic group, which is deeply oriented towards internationalization, and which is living a strong and stable growing phase with great momentum: following the opening of many commercial branches in Usa (Helios Quartz America), in China (Shenyang Helios Tech), and Hong Kong (Helios Quartz Asia), a new branch dedicated to Turkey region, Helios Quartz Turkey, has been opened in 2016.

Over 70 years of experience in the industry, highly qualified and prepared staff, multidisciplinary know-how, approach that values the needs of customers, the ability to carry out projects and develop customized solutions allow Helios Quartz to offer always the highest quality products, as well as efficient and professional services.

Thanks to its long track record and to its cutting-edge testing laboratory located in the historical Helios Italquartz plant in Cambiago (Italy), Helios Quartz can advise customers and provide them with the best solution for every specific application.

The company product range includes: IR quartz emitters (single and twin tube) in short, medium and fast medium wavelength; IR modules; quartz tubes, plates, disks and customized articles; UV lamps and polymerization equipment for UV reactive inks, lacquers and paints; UV kit and systems; ageing test simulator Inve 2000.

Helios Quartz products are able to meet all the most common needs of plastic and rubber processing and forming. Below, some of the most common fields of application of Helios Quartz IR emitters: welding of plastic parts; heating of prepreg composite materials; laminating; IR heating for PET preforms (blowing machine); shrinking of plastic foil; stretching of plastic films; thermoforming of plastic parts; deburring of stamped parts; embossing process; drying of plastic pellets; crystallization and drying of PET, PPS, PLA; curing of paints on plastic; softening process; forming process; bending process; vulcanization processed in rubber industry; drawing of plastic tubes; sealing process; gluing process… and many more.

www.heliosquartz.com

Thickness measuring system

The "divine" blow

The solutions offered by Electronic Systems (booth J03, Hall 10 at K 2016) for measuring and quality control systems, designed in particular with extrusion and calender lines in mind, are always developed on the basis of solid scientific foundations. At the same time, they are easy to use even for operators without a high level of training and specialisation.

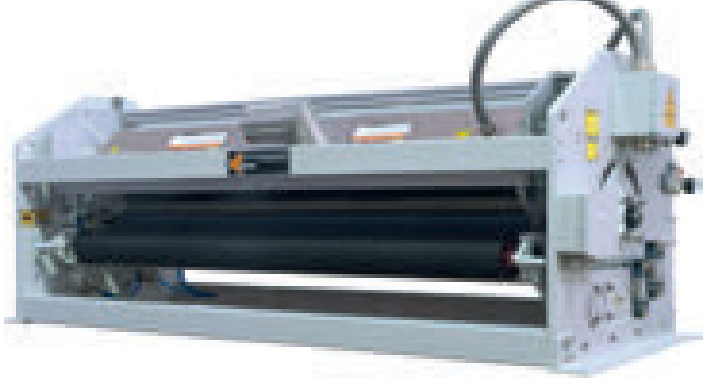
This manufacturer from Momo, near Novara (Italy), has made a number of technological developments for its range of measurement devices, including the pneumatic-induction technology, which has been highly successful over the past decade. It is used in the ESSAIR product line (namely Electronic SystemS AIR) where the thickness of plastic laminate is measured using what is defined, though somewhat emphatically, as "divine" blowing, an absolutely innocuous, light blow of air which is, therefore, as environmentally friendly and safe as one might hope. No ionising radiation, no contact with the material being measured. But more significantly, thanks to a patented concept, the company has developed a sensor that is able to self-calibrate, thereby skipping over the human component that can affect the outcome of complicated calibration procedures.

The simple, basic idea however required notable commitment before developing a device with suitable operating characteristics, even in particularly demanding industrial environments. Thanks to continuous improvement in performance and usage methods, this technology has found increasingly wider application scope for large scale use in a variety of production processes, spanning from extrusion to calendering and coating in their most extensive ranges. The measurement is done on materials like PVC, rubber, polymer film with various structures and expanded resins of different colours and complex formulas, without affecting the outcome. The diversity of the processing methods and specific measuring and control needs has been a source of inspiration for introducing new, innovative models.

In fact, using a number of sensors in self-calibrating versions for fixed positions, the company has set a new standard in the rubber calendering sector. This has led to advantages even in automatic thickness control, with consequent savings in raw materials. Today, it is also possible to measure a PVC sheet directly on one of the calendering cylinders where, until now, temperature and chemically aggressive environments have prevented the use of more traditional technology. For this application, together with the development of a new version of the pneumatic-induction sensor, a scanner has been developed to operate in high temperature environments, with particularly aggressive vapours and coating calenders with widths in excess of 4 metres.

www.electronicsystems.it


For more than 35 years, Electronic Systems has proposed innovative solutions for thickness measuring of plastics and rubber products



Universal corona station for the converting industry

Electronic industrial equipment

Digital corona generator for the BOPP industry

In recent years the production of BOPP film has seen the maximum speed of the line increasing rapidly. Today there are lines able to produce 625 m/min. These fast lines demand greater corona power. This is the reason why Me.ro, at the K Show (booth J62, hall 10), is presenting a new high power digital generator for the BOPP industry. The system is designed to have an output up to 150 kW and its main characteristics are:

- only one HV transformer (rather than many HV transformers in parallel);
- only one inverter stage (rather than many inverter stages in parallel);
- high efficiency due to the use of IGBT technology, together with a special electronic design;
- the possibility of fast shut-down in the event of small holes on the roller, so as to avoid ruining it;
- a specifically designed oil-filled high voltage transformer which can be adjusted to operating conditions in order to guarantee the best efficiency;
- complete reliability, for the following reasons: use of the most updated components on the market; overdimensioned components on every part of the generator to ensure a longer life of the system; electronic self-protection systems specifically designed for this application that avoid the risk of permanent damage in the event of high voltage discharges; use of a chopper between the AC/DC converter and inverter, which permits fast power control, fast switching on/off, power ramp up, and fast off in the event of a short circuit.

Of course, if the power to be discharged increases, this means that the discharge surface, too, must increase. In this regard Me.ro has studied and created special electrodes with 23 discharge points. These electrodes have been designed in such a way that it is possible to discharge this high power while maintaining the air gap absolutely constant on widths up to 10 metres. In fact, the system is designed so that the electrode can easily expand when under discharge, avoiding the creation of tension.

Moreover, at the K Show Me.ro will also be presenting its new model of universal corona station for the converting industry. It features a new extremely robust holding system for the ceramic bars, which makes it possible to eliminate completely the insulating materials previously used (the only insulating materials now used are ceramic insulators, which are easy to clean). Other important characteristics are: discharge bars in special ceramic material with profiles specifically designed for Me.ro; a system completely immune to air humidity, making it suitable for any environment (e.g. tropical ones); possibility of easy replacement of the single ceramic bar (downtime drastically reduced); easy dismounting of the complete discharge group for more accurate cleaning; new air-gap setting system through micrometric screws. **www.mero.it**

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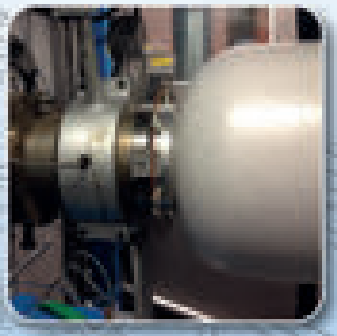


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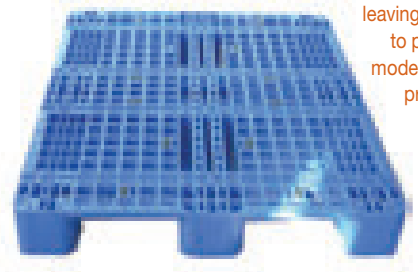
THE LONG LOGISTICS CHAIN

PLASTICS EARN THEIR TRAVEL TICKET

STEP-BY-STEP, QUIETLY, PLASTICS HAVE, IN RECENT YEARS, MADE THEIR ENTRY INTO THE WORLD OF LOGISTICS. SPECIFICALLY, SUPPLY CHAIN SPECIALISTS CURRENTLY DO NOT HESITATE TO QUALIFY THEM AS BEING RELEVANT AS THEY HELP TO SAVE A FEW GRAMS HERE AND THERE THAT CAN MAKE ALL THE DIFFERENCE. HOWEVER, THIS CHARACTERISTIC IS USEFUL IN MORE AREAS THAN JUST TRANSPORTATION

BY **PLASTICSEUROPE/PLASTICS THE MAG**



Reinvention of a symbol. Step-by-step, wood is leaving its place to plastics in modern pallets production

For many people, logistics is the activity that enables the physical flows of products, whether raw materials or finished products, to be organised from their point of origin to their point of consumption. Although true, this is a rather simplistic view of the process.

First of all, it is necessary to differentiate the work carried out in service of logistics from that of the supply chain. The former only concerns warehouse management, and the latter includes transportation. The globalisation of trade and the development of internet commerce mean that the logistics sector is currently particularly dynamic, and it is even considered strategic by many companies. The optimisation and streamlining of flows are now major issues. Although the organisational side of operations remains paramount, packaging and storage methods are also critical. And when it comes to shaving off a few kilograms to save fuel, plastics are a unbeatable choice.

PALLETS: A SYMBOL REINVENTED

It seemed like those good old pallets assembled from pine boards would never change. And it's true, they didn't. They were inexpensive, able to withstand pressures of several hundred kilos, recyclable, and more. It was hard to imagine a better alternative! Yet, their flawless reign is coming to an end. The reason: recycled high density polyethylene! In many warehouses, this new generation of pallets is slowly replacing its wooden competitor. Although the initial investment is a little more significant, it nevertheless very quickly pays for itself thanks to the strength of the polymer.

Logistics specialists believe that traditional pallets can be recycled an average eight times be-

Preventing the Pisa effect thanks to multi-layer stretch films made of polyethylene

fore being discarded, while plastic pallets can average around twenty. But that's not all; the widespread use of plastic pallets has helped to improve working conditions and safety for employees. Plastic pallets are extremely light: 6 kg versus a wooden pallet's 20 kg, they are safer as there are no splinters or nails, and they are more convenient as it is possible to stack 45 empty plastic pallets in a truck, which is three times more than for wooden pallets. Finally, and this is no small thing, they can be easily dyed to the company's colours, serving as a new and high-tech medium of branding.

Stacking boxes of goods on a pallet is an art in, and of, itself, and much attention is paid to levelling the crates in order to prevent them toppling over and causing thousands of Euros of damage. Not as easy as it may seem. Once again, plastics are called to the rescue. Pallets are currently enveloped in a stretchable and slightly tacky film which is actually quite similar to that used to protect food. The only difference is that it is thicker and therefore more tear-resistant. Made from three-layer polyethylene, it guarantees the stability of the palletised loads while securing them to the pallet during transport or storage. The film is also transparent, enabling the nature of the goods transported to be immediately identified.

CARDBOARD LOSES (SOME) OF ITS LUSTRE

That said, when it comes to non-reusable packages, cardboard still has a very bright future. It is cheap and light, although it has the single disadvantage of being fragile and therefore not being able to provide adequate protection for the goods it contains. That's why such goods are often wrapped in plastic bubble wrap or surrounded by polystyrene chips. But plastics find many more uses, particularly in bins made from polypropylene, a particularly resistant and recyclable thermoplastic polymer. Logistics experts are increasingly looking to this new generation of plastic bins, and especially for use in the field of pharmacy. Given that each pharmacy receives a delivery at least once a day, the delivery person can easily deposit their bin and recover it the next day once the products have been stacked on the shelves. Although they can be easily stacked, these new bins also have a lid that can be sealed by a polyamide lock-on tab if necessary. An RFID chip can even be integrated into the base of the bins in order to be able to trace the deliveries at all times.

Tanks for the transport of fluids are produced more and more often in composite materials

POLYMERS GUARANTEE THAT THE COLD CHAIN IS UNBROKEN

Let's stay in the realm of packaging. Products such as vaccines and certain cosmetic creams are particularly sensitive to temperature changes and cannot withstand extremes of heat or cold. How can they be then transported to warmer countries? There are, of course, refrigerated vehicles but they are particularly costly and are not always an optimal solution. Packaging manufacturers have turned to polymers to provide insulated boxes aimed at ensuring that a specific temperature can be maintained over a perfectly defined period of time. Polystyrene boxes have been around for a long time and they are of course perfect for wholesalers who ship their fish to locations that are sometimes several hundred kilometres away. However, they have a requirement; they must be filled with ice in order to fully make use of their isothermal capabilities. This is far from ideal for medicines and cosmetics.

As a result, a more modern type of packaging was created. It generally consists of three layers of polymers, a heat-reflecting metallised polyester, polyethylene foam and a fully inert polyethylene film approved for the transport of food or medicine. These polymers can even be enriched with a eutectic gel, sandwiched within their internal structure, which can double the time during which a specific temperature can be maintained. This is the type of packaging used when transporting grafts for human transplants.

Polymers provide continuity in the cold chain for the preservation of foods and medicines

POLYESTER FOR TRANSPORTING FLUIDS

Despite their metallic appearance, many of the tanks on tankers are in fact made from a composite material combining polyester and fibreglass. And although some tanks have what seems to be a metallic finish, it's purpose is mainly to deflect light and therefore prevent the liquids they are carrying from overheating. In this case, decreasing weight is not the main issue as this composite material is not any lighter

than steel. The reason for the composite taking over is primarily the fact that it is easily mouldable and therefore increases production rates. Another of its advantages is its resistance as it can withstand extremely violent impacts. Finally, this same polymer is used in mass-produced boats for its watertightness.

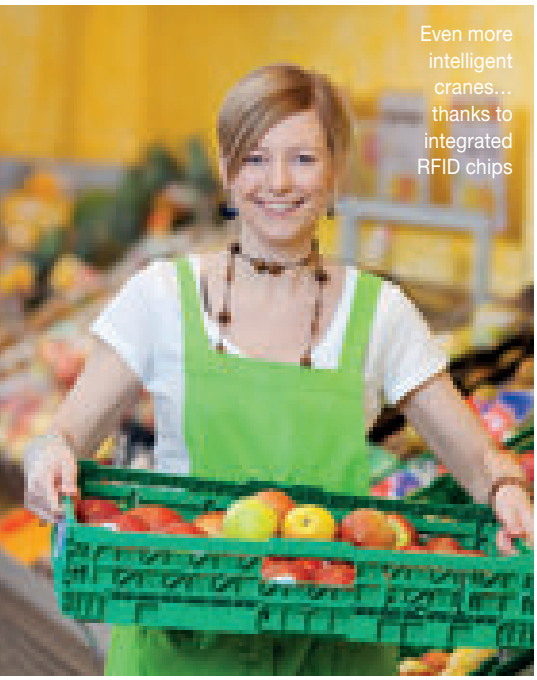
A SIMPLE IDEA THAT CHANGES EVERYTHING

One of the characteristics of modern commerce is that branded stores, supermarkets and hypermarkets have imposed their own rules, even in urban centres. Business models have evolved and the primary objective of these stores is zero stock. But how can you sell anything with no stock? Polymers provide many answers to this crucial question.

The idea is so simple that one wonders how it could not have been thought of before now. Take, as example, a clothing brand that has a huge warehouse supplying dozens of shops. Every morning, a truck leaves the warehouse to go on its rounds, restocking points of sale. Until recently, goods were piled in cardboard boxes. Once they arrived at their destination, sellers unloaded the truck and put the clothes on the shelves before the store opened.

However, things have changed. The clothes are now sent out from the warehouse in plastic wheeled bins sorted according to their intended department. When unloading the clothes, each seller knows which bin is intended for which department and has to just wheel it along to its destination. Thanks to these bins, the process is better organised and everyone is happier for it. For sellers, it is one less tedious task to perform and within the store, a considerable amount of time is saved.

Customers who turn up at opening time no longer have to witness shop assistants hovering around large boxes because the products have not yet been sorted and put on the shelves. The store's image greatly benefits from this particular innovation. In addition, the bins are stackable and, of course, reusable.



Even more intelligent cranes… thanks to integrated RFID chips

STRONGER THAN STEEL

Another revolution is taking place in stores and this one relates to shelves. Most of them are still made from steel sheets, but plastics are increasingly used to replace them. For good reason, in fact, because they are easy to set up and use, they can be made in any colour and any shape. Plastic shelves herald the final days of the drab black or white vertical and horizontal lines that characterised shelving until now. However, that is not their only selling point. The shelves, especially those made from polypropylene, have more than demonstrated their robustness. Impacts from shopping carts won't damage them. Gone are the days of scratched paint that makes a shelf look cheap and downmarket.

Plastic shelves are also finding a home in the small food warehouses belonging to major hypermarkets. Storing food is no easy task as hygiene standards are extremely demanding. However, polymers are much easier to clean than metal; for instance, cleaning stainless steel requires using sodium hydroxide and multiple passes under water. Water and a light detergent are sufficient for cleaning plastic, and the solution can simply be rinsed away in one go, which saves water! Finally, plastics are much better able to withstand humidity, which can reach up to 98% in cold rooms.

CRATES ARE EVEN GROWING MORE INTELLIGENT

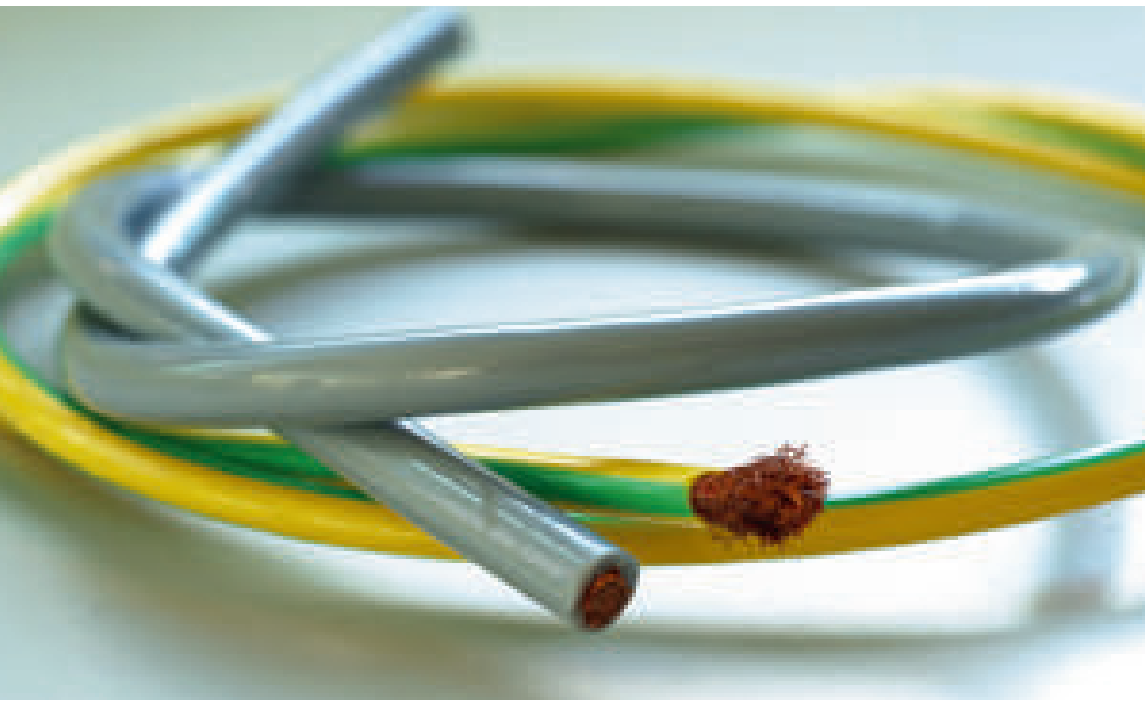
Even better, although the news may not please those who enjoy a good fireplace: the wooden crates used for transporting fruit and vegetables, which are so useful for lighting fires, are slowly being replaced by their plastic competitors. And there are many reasons for this phenomenon taking place. Early growers and supermarkets use them because they are highly resistant to moisture. More and more supermarkets spray water on their fruits and vegetables in order to keep them fresh; wood, on the other hand, which is very sensitive to moisture, can rapidly deteriorate. This does not happen with materials such as polypropylene or high density polyethylene (HDPE). What's more, much like plastic packaging, plastic crates are also reusable.

Some retailers are even going further, asking market gardeners to equip these crates with RFID chips in order to trace the goods from source to destination. Besides improved traceability, each crate is now geolocated, which reduces losses and contributes to sustainable development since it is estimated that nearly 150 tons of crates are recovered for reuse or recycled on an annual basis. Good news for the planet!

www.plastics-themag.com - www.plasticseurope.org

A simple idea can make the difference: plastic wheeled bins

Because of its fragility, cardboard is losing ground in the field of non-reusable packaging (photo: Veba MediTemp)



SIPOLPRENE RANGE BY SIPOL INCLUDES DIFFERENT TPC-ET GRADES, OFTEN USED FOR CABLE JACKETING APPLICATIONS, DEVELOPED BY THE COMPANY THROUGHOUT THE YEARS. A STABILIZED GRADE HAS BEEN OBTAINED, OFFERING GREATER RESISTANCE TO POLYMER DEGRADATION, THUS IMPROVING THE PERFORMANCE OF THE POLYMER ITSELF

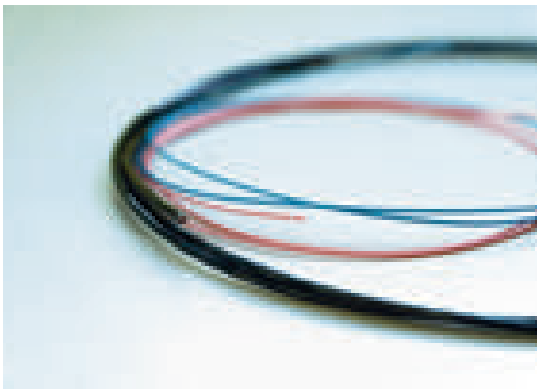
TPC-ET FOR CABLE JACKETING

MANY PROPERTIES, JUST ONE PRODUCT: PERFORMANCE AND SAFETY GUARANTEED

In the cable industry, many different thermoplastic elastomer materials are used for jacketing operations. Both electrical flow properties (intensity, voltage etc.) and peculiarities of conductive materials identify the specific insulation needed for cables.
When selecting the most suitable thermoplastic polymer for cable jacketing, several properties have to be taken into consideration, bearing in mind the electrical, mechanical, thermal characteristics of the polymer as well as its chemical resistance. Being insulation the primary requirement for a cable jacket, the electrical properties of the polymer - dielectric constant, insulating capacity to the power factor and arc resistance - need to be evaluated first.
Besides, jacketing has to take into account working conditions and regulatory requirements for the specific application.
In the electronic adjustment of car reflectors, for example, the fogging behaviour of the polymer used is the main characteristic to be considered when choosing the polymer for the cable jacketing of such systems. Instead, in complex cable systems for undersea exploration, fogging becomes negligible as the focus is on hydrolysis resistance.

A DEMANDING APPLICATION

Cable jacketing is obtained through a traditional co-extrusion process where the cable core (usually copper or optical fibre) is insu-



The prolonged contact between metal and polymer at high temperature can lead to the degradation of the polymer, sometimes speeded up by the catalytic action of metals, such as copper. To inhibit such a phenomenon, different stabilized Sipolprene grades are available (identified by the suffix MD)

lated from the external environment by the thermoplastic polymer.
PVC is still the most widely used polymer for protective jackets, especially in electric applications, due to its excellent cost/performance ratio. The variety of technical requirements to be satisfied have led to a rapid growth in the use of specific engineering plastics, where the main are HDPE, PEX, TPU, PBT, TPV, PA, fluoropolymers and TPC-ET.
Sipol, an Italian company specializing in manufacturing co-polyesters and co-polyamides, has been developing, for years, TPC-ET (polyether-polyester based thermoplastic elastomers), known as Sipolprene and commonly used in cable jacketing.
In highly variable working environments, the Sipolprene range is able to put together in a single kind of polymer, high dielectric strength characteristics (with values between 22 and 27 kV/mm as per IEC 60243), the mechanical characteristics of a thermoplastic elastomer and the typical high chemical resistance of a polyester. TPC-ET, thanks to their block structure with a combination of "hard" and "soft" segments, maintain their mechanical properties of flexibility and creep resistance at temperatures between -30°C and 100°C. In addition, all Sipolprene products do not contain halogens, phthalates and heavy metals, and are suitable for direct food contact.
The interaction between metals and polymers, at high temperatures and with long contact times, leads to thermo-oxidative degradation effects due to the presence of free radicals. Studies have widely demonstrated that some metals, such as copper, at high temperature, also cause a catalytic action that speeds up the polymer degradation process.
Sipol has therefore developed a range of stabilized products (identified with the suffix MD), like Sipolprene 72220 MD, in which the metal catalytic action is inhibited by using a stabilization package that guarantees improved resistance to degradation.

COLLABORATION AND TESTS

The collaboration between Sipol and the Laboratory of Materials and Polymers (LaMPo) of the University of Milan, has provided the demonstration of the advantages achieved in terms of copper stabilization. Thanks to a comparative study between Sipolprene MD 72220 (stabilized version) and Sipolprene 72220 (standard version), carried out in extreme conditions (high temperature and oxidizing atmosphere), some stability differences have been demonstrated.

Amongst the applications of Sipol products, there are cables with optical fibres or metal core

In cable jacketing, the electrical properties of the polymer used are the first to be evaluated as the ability to ensure effective insulation is the main requirement

Tests to evaluate the MD stabilization package performances were run in the presence of metallic copper on copper wire jacketed with both stabilized Sipolprene 72220 MD and standard Sipolprene 72220 (method prescribed by the IEC 60811-410 regarding the evaluation of oxidation resistance catalysed by copper of polyolefin-insulated conductors). From an analytical point of view, tests were run with DSC equipment (Differential Scanning Calorimetry). The DSC analysis is generally used to evaluate the material thermal transitions, such as Tg glass transition temperature, melting temperature and crystallization temperature. In this specific case, the DSC equipment has been used to measure the so-called OIT (Oxidation Induction Time), which is the time that elapses between the end of melting of the material and the beginning of its decomposition, under isothermal conditions of high temperature and in an oxidizing atmosphere with pure oxygen. The greater the oxidation stability of the material, the higher the OIT value. The samples were heated up to 300°C in an inert atmosphere and then kept at the same temperature for 30 minutes in a pure oxygen atmosphere.
Thermograms comparison (**figure 1**) shows that, while the cable covered with standard Sipolprene 72220 (blue curve) has an OIT of about 9 minutes, the cable covered with Sipolprene 72220 MD (pink curve) shows no evidence of degradation for the entire duration of the test.
The superior behaviour of the MD series has been proved for all those applications requiring extremely high working temperatures. The MD stabilization is available, on request, on all Sipolprene grades with hardness between ShD 25 and ShD 72. ■
www.sipol.com

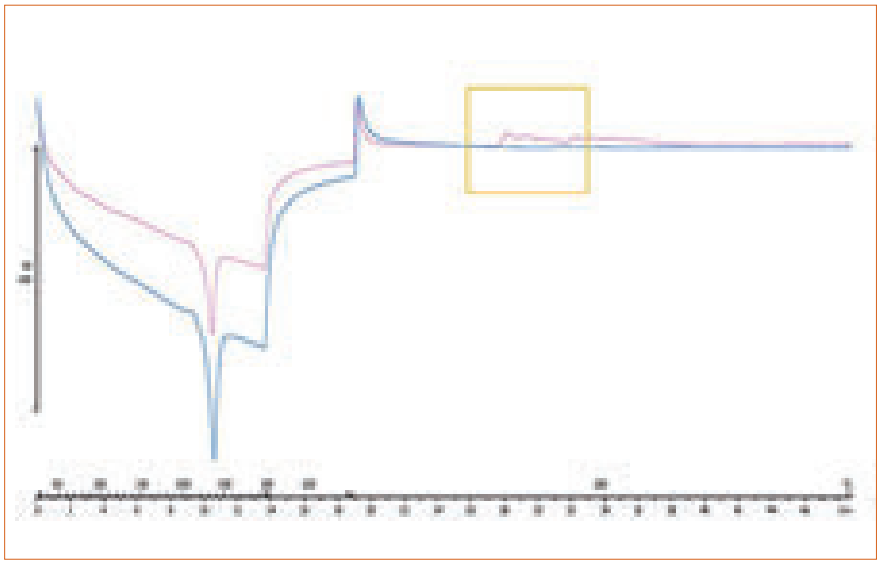


Fig. 1 - Thermograms comparison shows that, while the cable covered with standard Sipolprene 72220 (blue curve) has an OIT of about 9 minutes, the cable covered with Sipolprene 72220 MD (pink curve) shows no evidence of degradation for the entire duration of the test

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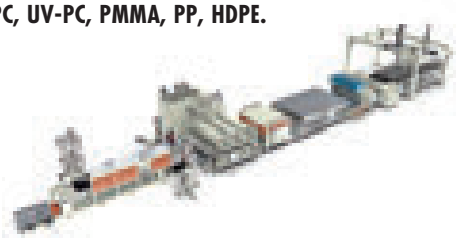

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50 YEARS AT THE TOP OF THE EXTRUSION TECHNOLOGY

A THREE-COMPANY NETWORK

TOGETHER FOR ELASTOMERS

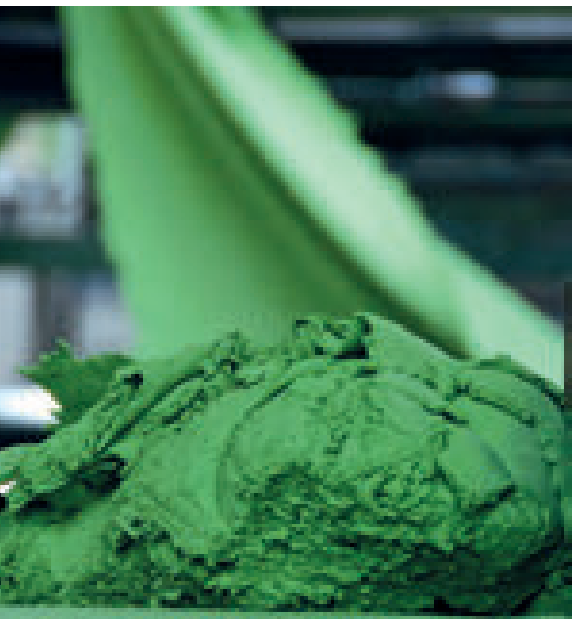
FOUNDED IN 2009 BY A GROUP OF EXPERTS IN CASTEL GUELFO, BOLOGNA (ITALY), ELASTOMERS UNION MANUFACTURES FLUOROELASTOMER COMPOUNDS BASED ON ITS OWN FORMULATIONS. IN ORDER TO FIT THE SPECIFIC NEEDS OF THE PROCESSORS BY OFFERING NEW HIGH QUALITY POLYMERS AND COMPOUNDS, THE COMPANY DECIDED TO CREATE A NETWORK COMBINING ITS EFFORTS WITH THOSE OF TWO OTHER COMPANIES: SERSAR AND DOTT. VIOLA & PARTNERS CHEMICAL RESEARCH

In 2009, aware that the fluoroelastomer polymers available on the market could not satisfy the emerging demand, some professional "rubber men" decided to field their skills and decades of experience in the rubber world in a completely innovative way compared to the other players: they wanted to develop new polymers in order to obtain compounds able to optimize modern moulding methods, thus meeting the increasingly challenging needs of final customers.
To achieve this goal three different companies, each with its own identity and role, were founded to create effective cooperation and synergy: Elastomers Union, Sersar, and Dott. Viola & Partners Chemical Research.

THE NETWORK

Elastomers Union is an industrial company manufacturing compounds based on bisphenol or peroxide curable fluoroelastomers (FKM). Within the European landscape, this company is different from its competitors because, on the one hand, it is a compounder exclusively specializing in FKMs but, on the other hand, is also able to act, either directly or through its associate companies, on the whole production chain, from the raw material to the finished product.
Most of Italian moulders and extrusion companies are in Elastomers Union's sales portfolio and the company is gaining market share, through a successful market penetration strategy, in the whole of Europe, which represents about 10% of its turnover (2015).
The second company in the network, Sersar, is active in the trading of fluorinated polymers made in China. It directly manages all the necessary logistics steps to supply the Chinese material to the European compounders, using a bonded warehouse in Milan, from where the material is customs cleared only upon receipt of customers' orders.
Finally, Dott. Viola & Partners Chemical Research is a research firm specializing in the synthesis and molecular characterization of elastomers as well as in the study of new applications. Specifically, in the field of fluorinated rubbers, this company:
1. provides qualified scientific support to Sersar, the trading company, by verifying the quality of the raw material and directly interfacing with the Chinese supplier;
2. ensures qualified scientific support to Elastomers Union, the compounder, and in particular, it studies new curing systems;
3. provides the necessary scientific support to the producers of fluorinated rubber to overcome problems and weaknesses in the current production, suggesting new process and product control systems and providing coaching support;
4. tries to find new applications for fluoroelastomers, over and above the familiar ones.


Elastomers Union headquarters in Castel Guelfo, Bologna (Italy)



Instead of a filter die, Elastomers Union uses a gear pump to filter its polymers in order to obtain a less stressed product and avoid the breaking of the filters, a very common occurrence due to the high viscosity of the fluorinated polymer

The main figure at the company is Gian Tommaso Viola, who has decades of experience in the world of organic chemistry, having been technical manager in the two major Italian petrochemical companies. A leading expert in the field, Viola holds numerous patents used worldwide on industrial scale and, among other honours and recognition bestowed on him, it is worth remembering the 2009 Technical Award of the Institute of Synthetic Rubber Producers (IISRP, New York) for his contribution to the development of new materials.

COMMON STRATEGY FOR INDUSTRIAL DEVELOPMENT

The synergy between the three companies and Shanghai 3F New Materials - a high-tech company listed on the Shanghai Stock Exchange (2,760 employees, 2015 turnover: over 500 million dollars), specializing in research, development, production and marketing of refrigerant gases - is crucial. On the one hand, the Italian network provides support on the application side as well as deep knowledge of the materials and applications; on the other hand, the Chinese company has a huge production capacity. While 3F is supplying an undeveloped and stabilized market, the three Italian companies perfectly detect and monitor the needs of the European market and can easily find the development line and the types of material suitable to fulfill such needs.

In this regard, it should be noted that, so far, Chinese fluoroelastomers have always been placed on the market by traders, with the notable exception of Sersar-Elastomers Union companies. In this context, the problems linked to the poor quality and mediocrity of the eastern product range have been solved by almost all the compounders by mixing Chinese and European FKM rubbers. As a result, supply, not sufficiently pressurised by a more stringent kind of demand, is "crystallized" on the FKM types of a lesser value.

Conversely, the cornerstone of the strategy put in place by the three Italian companies is the introduction into the western market of products offering high added value, developed by Dr Viola & Partners Chemical Research, using 3F research and production facilities.

REGISTERED TRADEMARK

The technical and commercial strategy adopted is, as mentioned, completely new compared to the present situation: no longer a Chinese product placed on the market by traders, without suitable technical and scientific support, but a range of products tailored to the specific requests and needs of the customer.

As a consequence, a new brand and its registration became unavoidable steps to take to advertise a material that needs to overcome psychological barriers deriving, up to now, from the negative reputation for quality of the FKMs made in China. For this reason, the products are marketed by Sersar, official and exclusive distributor of 3F products for the European market, under the registered trademark "Seflor".

TARGET MARKET OF FLUOROELASTOMER COMPOUNDS AND ELASTOMERS UNION POSITIONING

Elastomers Union target is the market of fluoroelastomer compounds, largely influenced by the automotive industry. In fact - although there are interesting niche sectors (medical, pharmaceutical, aerospace etc.) in which the company is already working with a potential for further expansion - there is no doubt that 90% of such materials are destined for the automotive supply chain. This can easily be explained, bearing in mind the physical and chemical properties of the fluoroelastomers, ideal to meet the high and strict performance standards required by this industry, such as temperature or fluids resistance, and so on.

Elastomers Union has launched an important development plan following the availability of these new raw materials, competitive from an economic point of view and, often, even better performing than premium materials.

One of the first results obtained by some FKM compounds based on Seflor bisphenol curable terpolymers is the fulfilment of one of the most common and stringent specifications of the automotive market, normally exclusive to top class materials (peroxide curable terpolymers) or making an exception to VW 2.8.1 A/C 65 ed.2014-12. ■

www.elastomersunion.it

The winning strategy of Elastomers Union is based on the investments in R&D and the direct collaboration with its suppliers, with the aim to always offer new and increasingly better products

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Technical questions

SPACE DEVOTED TO READERS' QUESTIONS ON ISSUES RELATING TO THE PROCESSING OF POLYMERS. THE ANSWERS ARE PROVIDED BY EXPERTS FROM CESAP, ITALIAN SUPPORT CENTRE FOR PLASTICS PROCESSORS AND USERS, NOW BELONGING TO ISTITUTO ITALIANO DEI PLASTICI

AVOIDING CIRCULAR MARKS ON MOULDED ITEMS

Circular marks sometimes appear on injection moulded parts. We don't know why they appear, or what we should do to eliminate them. What do you suggest?

The appearance of circular marks on the surface of manufactured items - such as the ones shown in **figure 1** - can be caused by different things. Sometimes the defect can be mistaken for a sink mark, which is actually caused by the volumetric shrinkage of the material during the cooling stage, and therefore is not compensated by the addition of other material.

Other times, the mark might appear as a difference in the surface sheen, due, for example, to uneven temperatures in the cavity, or incorrectly sized ribbing in places where backpressure is unable to act in an optimal way. Under other circumstances, the marks are due to the ejectors if they operate when the material has not yet reached the solidification temperature (frozen crust).

If all of these reasons have been ruled out, the surface defect can be attributed to the presence of lubricant that draws the fine ejector pins along the edge of the piece. These lubricants have the purpose of making the ejector pins pass over the piece more smoothly to stop them from gripping so the piece can be extracted easily, without having to increase ejection pressure. It should be noted that if the defect is clearly visible, as in the case in question, the piece is rejected for aesthetic reasons and the problem is resolved, the number of valid pieces produced merely being reduced. On the other hand, if the mark is not clearly visible, the damage may still be serious. In fact, the presence of lubricants can cause parts of the moulded piece to break, especially in the event of amorphous materials (PC, ABS, PPO and so on), which are highly susceptible to the presence of oils and solvents.

To avoid this problem, it is a good idea to adopt an anti-wear, non-grip surface coating for metallic parts exposed to dynamic sliding. These coatings are made by vacuum deposition of a thin film using the PECVD technique (Plasma Enhanced Chemical Vapour Deposition), which is the evolution of PVD (Physical Vapour Deposition). In contrast to PVD where the material deposited is obtained from a solid element through the process of sublimation, in PECVD, the compound needed for the coating is contained in a gas/vapour, which is rendered available by the action of the plasma.

Specifically, for moulds and components for processing plastic, the most suitable coating to apply using these techniques is DLC (Diamond Like Carbon), particularly suited for rather sticky polymers like plasticised PVC and thermoplastic elastomers. ■

www.cesap.com

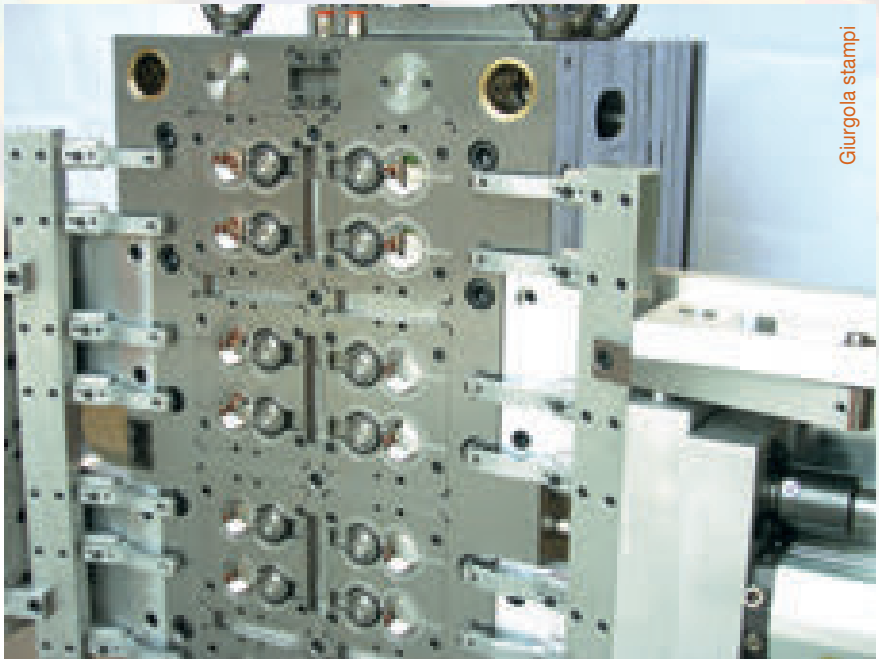

Fig. 1 - Circular marks on an injection moulded piece

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NEWS

On June 21 Solvay announced that its AvaSpire AV-651 CF30 polyaryletherketone (PAEK) will form three sections of the Polimotor 2 all-plastic engine's external dry sump modular oil pump housing

Solvay at K 2016

Innovations for lightweighting and additive manufacturing

Exhibiting in stand C61, in hall 6, under the banners "More Protection", "More Freedom" and "More Future", Solvay's participation at K 2016 showcases new products, innovative customer applications, manufacturing updates and leading viewpoints on industry trends. The company will also share perspective on its strategic transformation following the recent acquisition of Cytec's composite materials, additive stabilization solutions and specialty chemical businesses.

Accelerating advances in polymer chemistry and composites manufacturing are driving once unimaginable opportunities for lightweighting in industries from automotive to aerospace. Solvay's materials for this important trend range from high-performance polymers for metal replacement in today's down-sized, turbocharged automotive engines to its growing TegraLite (a trademark by Solvay) material technologies, which aim to reduce fuel consumption, increase efficiencies and accelerate development of cost-effective, lightweight solutions for the aeronautic industry. The company will also share further updates about the Polimotor 2 all-plastic race engine, designed and developed by industry pioneer Matti Holztberg.

Solvay also introduces two Technyl product offerings dedicated to the automotive market: a new series of heat performance polyamide 6.6 (PA6.6) for thermal management applications and an innovative PA6.6 range with a specified and controlled halogen content tailored to fit sensitive electrical and electronic applications.

Further insights into Solvay's commitment to lightweighting will be shared during K 2016 thanks to a presentation by Sandra McClelland, business manager for Transportation at Solvay Specialty Polymers, scheduled on October 21 at PlasticsEurope's stand (C40, hall 6) during the K's Lightweighting theme day.

Additive manufacturing solutions by Solvay will also figure prominently at K 2016. In addition to advances in leveraging specialty polymers for additive manufacturing, the company will introduce new additions to its Technyl Sinterline polyamide (PA) powders line. These new products are specially designed for 3D printing applications and for development of 3D printed prototypes for small series, predictive performance simulation and functional testing.

www.solvay.com

FRP lighter, quieter, better and more economical

Direct integration of rubber in FRP

Fibre reinforced plastics (FRP) are in line with the market trend: their excellent ratio of stability to weight makes them indispensable for use in motor sports, aeronautics and large series, such as mass transport and automotive applications. In addition to the costs, various other obstacles associated with the nature of the material itself also have to be overcome, such as acoustic properties, fragmentation and impact behaviour.

To achieve a slight flex, the Swedish bicycle manufacturer Rolo uses various carbon prepreg with tailor-made resin systems as well as a Kraibon inner layer in specific locations (photo: http://rolobikes.com)

To avoid these disadvantages, Gummiwerk Kraiburg developed Kraibon for industrial lightweight construction. The material consists of non cross-linked rubber foils, which can be directly integrated into existing manufacturing processes. Kraibon can be processed like pre-preg, or pre-impregnated composite fibres; in the joint hardening process they produce an excellent bond with fibre reinforced plastics (CFRP, GFRP, SMC etc.) and with metals.

An essential characteristic of FRP is the high component stability in relation to the weight, which however results in low damping behaviour and poor acoustic properties compared to conventional materials. Kraibon significantly improves the acoustic properties of FRP components: direct integration in the composition enables outstanding structure-borne sound attenuation of up to 20 dB with only very little additional weight. In addition, the weight reduction of about 2.5 kg/m² holds high innovation potential for manufacturers of indoor panels and floor tiles, for example.

Another important application for Kraibon is impact protection for components. Fibre reinforced plastics feature a polymer matrix that allows fixed and protected fibres to absorb the forces that occur. This works very well in the direction of the fibre orientation, but in transverse direction the structure can break down relatively quickly. By integrating Kraibon into the material, components can withstand 100-300% higher impact energies.

Another disadvantage of FRP is its unfavourable fragmentation behaviour - which is especially dubious in the case of passenger protection: in the event of a collision, normal CFRP components tend to break and shatter into many tiny pieces. The integration of Kraibon substantially improves the safety of the component. The elastomer layer is flexible and its excellent bonding holds the component together much better, thus minimizing fragmentation.

Kraibon also offers huge potential and possibilities in the hybrid combination of materials, such as metal and carbon. It functions in this case as a "glue" between the two materials. At this year's Composites Europe trade fair (Düsseldorf, November 29 - December 1), Gummiwerk Kraiburg will be represented at the joint stand of Bayern Innovativ (CNW) in stand F21, hall 8b.

www.kraiburg-rubber-compounds.com

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NEWS

Second generation biomasterbatches

Certified by Vinçotte

Biodegradable polymers coloured with Vanetti's Biomasterbatches successfully meet all the requirements of the EN 13432 standard and now are marked with the "Vinçotte OK compost" label

A constant focus on research and development has helped Vanetti to perfect its products. To recognize its work, the Italian company (based in Marnate, Varese, Italy) received latest certificate "Vinçotte OK compost" which attests to the quality of the Biomasterbatches (registered trademark), produced exclusively by Vanetti, and ensures their suitability for colouring new-generation biopolymers. Vanetti was one of the first company to examine and tackle environmental issues in the field of colouring plastic materials, and has now developed second generation Biomasterbatches for the latest biopolymers. These polymers have been molecularly modified and rendered even more adaptable to processing, so colouring them with the use of Biomasterbatches is the only natural choice. The greatest advantages of using Biomasterbatches are the ease of dispersion and easy processing during production in compliance with the latest European regulations governing biodegradation. Biomasterbatches are designed for application with PLA, Mater-Bi, and all the new biodegradable polymers. Using Biomasterbatches means adding value.

Not only do Biomasterbatches comply with regulations and produce spectacular colours, they also satisfy design demands for an industry whose key concern is protecting the environment. With Biomasterbatches Vanetti enhances its extensive range of products that complement the traditional masterbatches and additives. In addition, the company offers customers a 360° service for the processing of plastic materials. Its additives, for instance, supplement the basic molecular aspects when added to plastic during the production of a finished product, thereby creating a new product with technical characteristics specifically designed to satisfy the processors' requirements.

www.vanettimaster.com

Kraiburg TPE at K 2016

Thermoplastic elastomers, the perfect solution

When the international plastics and rubber industry meets in Düsseldorf for K 2016 (October 19-26), the thermoplastic elastomers specialist Kraiburg TPE (stand 6C58-03, hall 6) uses such opportunity to present its new and expanded products, as well as new applications in the automotive, industry, consumer and medical sectors.

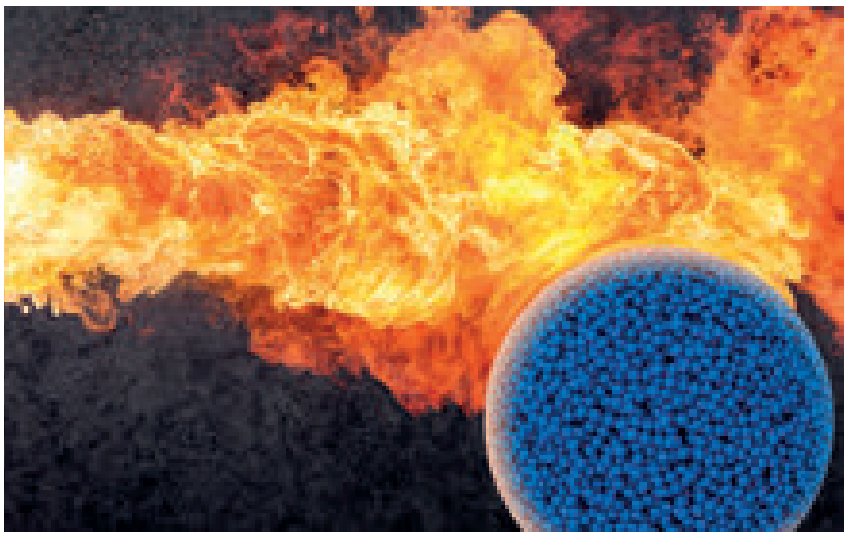
More in detail, one of the highlights is the introduction of flame retardant compounds of the FR/AD1 series. The thermoplastic elastomers of the Thermolast K portfolio were developed especially for applications in the construction industry, where they are used to ensure flexible cable installation in flush-mounting boxes. The material is flame retardant in accordance with UL94 and is included in flammability class V0. In addition, it features excellent adhesion with ABS and PC in 2-component injection moulding. The flame retardant compounds are highly elastic and free of latex, PVC and halogen.

Other product highlights from Kraiburg TPE at K 2016 will include materials for drinking water applications as well as under-the-hood automotive applications.

Thermoplastic elastomers for use with drinking water have all important European certifications to ensure compliance with high safety and hygiene standards. They are therefore also ideal for hoses in sanitary systems or beverage dispensers. Kraiburg TPE developed its Thermolast V products for use in under-the-hood automotive applications; with temperature resistance up to 130°C and adhesion to polyamide, these TPEs open up new areas of application.

"The K is our trade fair highlight of the year 2016; it gives us the ideal platform for presenting our expanded product portfolio and talking to existing and prospective customers from around the world. As a global player, the biggest international plastics fair offers our experienced trade fair team the opportunity to identify trends and discuss new areas of application for our TPE", explains Michael Pollmann, sales & marketing director EMEA at Kraiburg TPE.

www.kraiburg-tpe.de



Amongst its new products, at K 2016 Kraiburg TPE presents a series of compounds for flame retardant components used in construction industry, sanitary installations in contact with drinking water or under-the-hood applications in the automotive industry

Trends for 2017

A symphony of colours

"Daniel Mandler composed the symphony exclusively for the Grafe-Design-Center on the basis of the 2017 trend colours", said Julia Canzler, Design & Packaging Division at Grafe and responsible for the colour developments

For the presentation of its 2017 trend colours, the Grafe-Design-Center of the Grafe Group in Blankenhain, Germany (stand E75, hall 6, at K 2016), has created a unique highlight - It has succeeded in combining colours and music in a way that has never been experienced before. An orchestra of the "Franz Liszt" Music College in Weimar was commissioned to record a spectacular "Symphony of Colours" in which colours are made "audible". With this symphony, Grafe has managed to combine a palette of colour variations created for our eyes with a medley of notes composed for our ears.

The Weimar orchestra then recorded the piece and what has emerged is much more than just a pleasurable listening experience. The result is a visual highlight as well. "The musicians were filmed as they worked on the piece in the studio. After four days of filming and extensive post production efforts, the film studio has created an amazing film showing how the colours emerge from the instruments", explains Julia Canzler, Design & Packaging Division at Grafe and responsible for the colour developments. The result is a DVD that captures the "Colour Preview 2017" in sound and images and will be featured in Grafe annual calendar. The video is also available on the company's homepage and at https://youtu.be/lgM9GVxPf-M.

Characteristic of the 2017 trend colours are their extreme contrasts in which shades of green and blue dominate. These present themselves in rough variations of aquamarine, reflecting the natural greens of forests and meadows. This year's colour combinations have also become more natural, as greens merge with shades of brown to lend new life to the popular safari style. These are placed in contrast to a deep black and an extreme red.

"There is a special focus on shades of pink that appear artificial and synthetic when set in opposition to the variations of blue and green. This is perhaps suggestive of our yearning for an exotic paradise", Julia Canzler reveals. Inspired by trade fairs, seminars, talks and her own research, she is also responsible for creating the colour combinations of each new season.

Special attention is placed on metallic colours. In 2017 these colours take on a liquid and flowing appearance. Gold and silver also play a special role with gold appearing more natural and elemental, almost as if it were revealing tales of long forgotten times. Silver is no longer a pure metal but appears with a light tinge as in the case of Sound Silver or Polyphonic Silverblue.

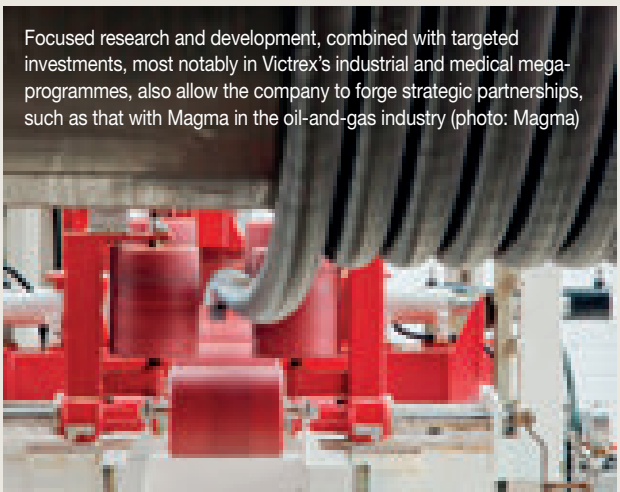
The new colours of course would not be complete without nude tones. For the coming season these emerge with a natural paleness. "Basically we are talking about white with a touch of yellow or pink", explains Julia Canzler. She also reports that the 2017 pastels will be more sober-minded, almost as if they are covered by a light blue mist: "The colour effects are contrasted in a similar fashion. They may be left out completely or used to set clear accents. Orders between the natural and artificial worlds are seamless and flowing". It's less important whether the colours are opaque, translucent or transparent. Basically, anything is possible. www.grafe.com

Victrex at K 2016

When performances support innovation

PAEK-polymer specialist Victrex is to present its significantly extended portfolio at K 2016, in stand B09, hall 5. Recently, the world's longest structure based on Victrex PEEK was developed in the form of spoolable m-pipe from Magma, which provides a reliable, cost-efficient underwater intervention pipe. This flexible composite pipe can be used in extreme conditions at depths of up to 3,000 metres and can withstand pressures of over 1,000 bar. Meanwhile, Victrex is investing in a production facility specifically for composites. Furthermore, the company presents new polymers for the oil & gas industry, including a thermoplastic that offers a unique range of properties for sealing systems at cryogenic -196°C temperature and up to 200°C , and OGS 125, that has been specifically developed to optimise the compression moulding of large seals.

In another business area, the recently introduced Victrex AE 250 composites, in various prepreg forms, offer great potential for the aviation industry and these new PAEK are introduced for the first time at a K trade fair. In combination with hybrid moulding technology, mounts, clamps, clips and housings for primary and secondary structures can be manufactured in minutes, whereas metallic or thermosetting materials might take hours. The full PEEK-based gears package, which the automotive industry has been able to access at Victrex since last year, has also featured at the K stand. The company has built-out its expertise through the acquisition of a US gear specialist, with the aim of offering both efficient custom and complete services for the precise and rapid design, development, testing and production of gears, right along the delivery chain. www.victrex.com



Focused research and development, combined with targeted investments, most notably in Victrex's industrial and medical mega-programmes, also allow the company to forge strategic partnerships, such as that with Magma in the oil-and-gas industry (photo: Magma)

NEWS

More than 60 years of silicone expertise

Tailor made solutions for silicone rubber market

With worldwide operations and headquartered in Lyon, France, Bluestar Silicones (hall 7, level 2 A02 at the K Show) is a global producer of silicones with a turnover of 650 million dollars. The company is a supplier with a fully integrated manufacturing chain and more than 60 years of silicone expertise. It has production plants on all continents, and combines upstream silicon metal operations and expertise in the development of downstream market applications. The company offers a comprehensive range of silicone technologies in support of numerous diverse market specialties, including anti-adherence for paper, textile coating, healthcare, mould making, automotive, aerospace, defoamers, and personal care. Bluestar Silicones belongs to Elkem, Norway. Its Bluesil rubber products are meant to be an adaptive toolbox with immense possibilities.

Bluestar Silicones Mix & Fix Centres are specialized formulation and packaging units located at the centre of major rubber and elastomer converter regions (Latin America, Europe, Asia and North America). Specialized in heat cure silicone rubber (HCR), the Bluestar Silicones Mix & Fix Centres develop, within extremely short lead times, products according to customer's specifications and equipment.

Much more than products, Bluestar Silicones helps companies to deliver their potential with a range of services such as R&D training, supply-chain optimization & stock management, product stewardship guidance, dual-sourcing or reprocessing service… just for example. www.bluestarsilicones.com

Automotive, electrical/electronic, food and sports & leisure are just some of the application markets where silicones can be used

Compounds and masterbatches

A continuous improvement of production and quality

Compounds and masterbatches by Color Tech can be used for different applications and industries

Founded in 1997, Color Tech is an Italian company specializing in the production of compounds and masterbatches. For about twenty years it has been responding to the needs of plastics processors with a personalized and flexible service under the experience of Marco Montagner and his sons Mauro and Andrea.

Color Tech offers a very wide range of products to satisfy the needs of different markets. Through the research and the study of customized products, it completes and satisfies properly each request with specific technical and colorimetric characteristics.

The company has grown steadily over the years thanks to careful investments in research and in plants, always trying to provide an even greater quality and diversification of production. All Color Tech compounds and masterbatches are subjected to careful checks and studies for ensure the compliance with the certification and a high level of quality. The company boasts a laboratory where are carried out all the physical evidence, rheological, thermal, mechanical and colorimetric both of finished products and incoming raw materials. The different production units provide high quality standards both in small and high quantities of a product - that allows to make it possible important levels of flexibility regarding the production and also to the customers' requests.

The compounds manufactured by Color Tech are based on ABS, SAN, ASA, PS, PC, PP, PMMA, and various alloys amongst which PC/ABS and PC/ASA. All products are available with different technical characteristics: high impact, heat-resistant, flame retardant, reinforced and filled with various minerals, natural or coloured sample, RAL, Pantone, NCS, special effects and with different types of additives. For most of these compounds, Color Tech is able to provide, on demand, different versions, using environmentally friendly materials, completely or partially regenerated, carefully selected.

As regarding the masterbatches, there are different kind of colours and effects: white, black, sample colours, RAL, Pantone, NCS, transparent, fluorescent, metallic, perlescent and special effects with different additives. All products are also available on different carriers (PE, PP, PS, SAN, PC, PA, PU, PMMA etc.), depending on the material and the industry in which they are used (such as injection moulding, blow moulding, extrusion etc.). The products could be supplied also in micro granules which allow the obtaining of improvement of the dispersion and plasticizing with the material used.

All chemical compositions are free of heavy metals and comply with the RoHS Directive and the REACH Regulation. According to specific requirements, Color Tech respects the regulations of the various national and international standards in the field of compliance with food and toys. In May 2016, the company obtained the certifications ISO 9001 and ISO 14001 for quality and environmental management system. For its twentieth anniversary, Color Tech has a goal: in 2017 it wants to grow up into the foreign markets, continuing to expand the production in terms of volume and products always in a continuous improvement of its production and quality.

www.colortech.biz

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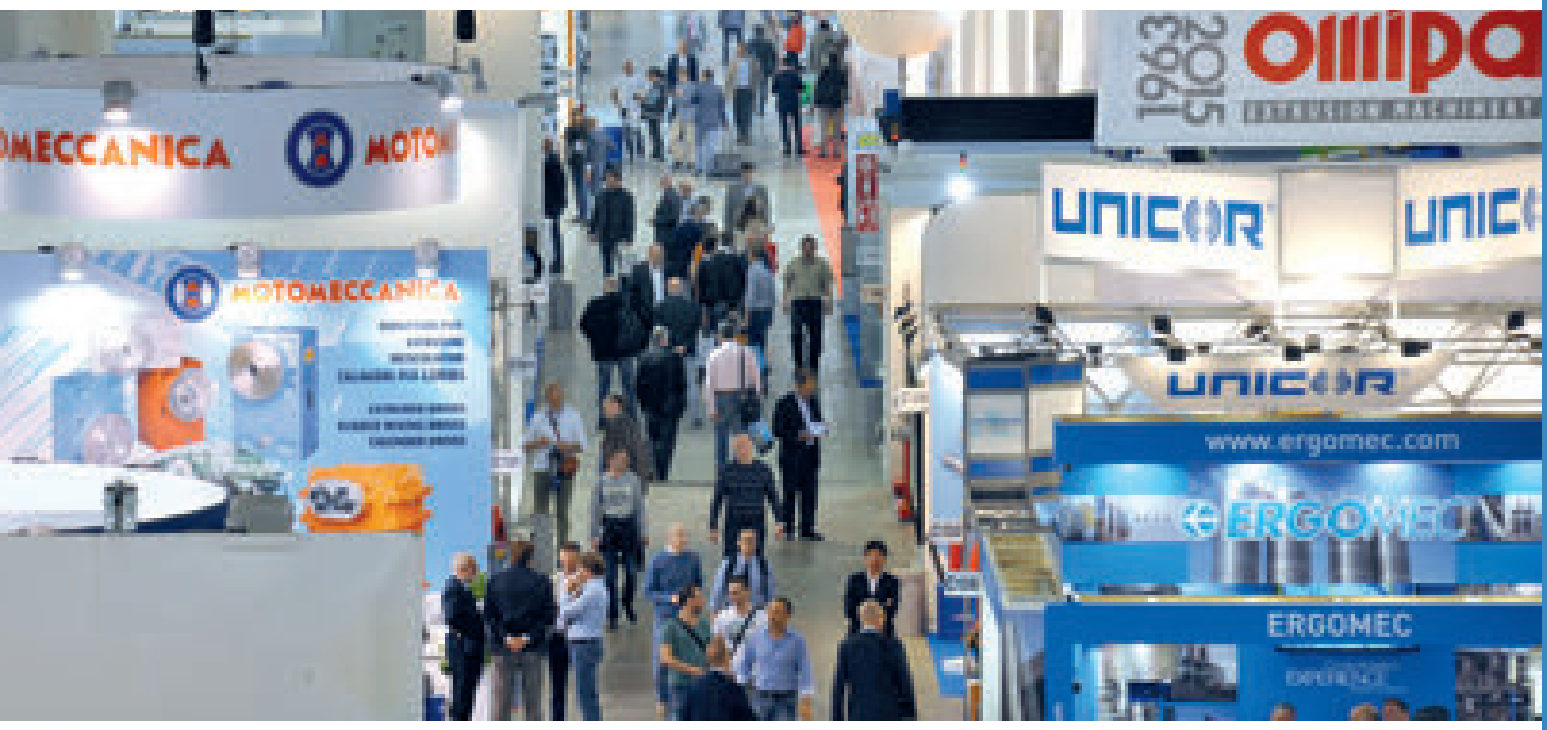

PLAST 2018 & THE INNOVATION ALLIANCE

WORK IN PROGRESS

THE ORGANISERS OF PLAST 2018 WILL PRESENT WHAT IS NEW FOR THE LEADING ITALIAN INDUSTRY EVENT AT THE ASSOCOMAPLAST STAND (A56, HALL 16) AT THE K TRADE SHOW IN DÜSSELDORF, FROM OCTOBER 19 TO 26, 2016

The next edition of Plast, the triennial exhibition, is coming back to the Milan fairgrounds in Rho, from May 29 to June 1, 2018 and is now well ahead in its preparation. The official launch of the fair will take place in October at K 2016 in Düsseldorf.

There will be a lot of new features, starting with the duration of four days to meet the needs of exhibitors and visitors, many of whom have expressed a preference for the fair being concentrated into week days (previously it also included Saturday).

A lot of exposure is also being given for the strategic alliance with four international events being held concurrently: Ipack-Ima, Meat-Tech, Print4All and Intralogistica Italia, an outstanding showcase for the production of machinery, technology and materials for the manufacturing industry. This project called “The Innovation Alliance” was officially presented last February to the press, exhibitors, visitors and professional operators who are potentially interested.

Plast and Ipack-Ima are therefore getting back together (as was the case in 2006 and 2009), offering visitors and exhibitors access on the same ticket and occupying their own traditional halls, with the usual assembly and dismantling dates. Other concomitant shows will complete the showcase: Meat-Tech, Print4All (which takes over from the former Converflex show) and Intralogistica

The 3D Plast satellite hall made its debut at Plast 2015, the last edition of the trade show. Dedicated to the production of additive production, rapid prototyping, modelling software, 3D printing and similar technologies, it attracted significant interest

After good results in 2012, the Rubber hall dedicated to elastomers returned again to Plast in 2015, increasing the exhibition space by about 30%

Italia (indoor handling), giving life to a one of a kind trade fair, with many unique forms of collaboration and a notably broadened international resonance.

Wide support for the initiative has also come from institutions, including the Ministry for Economic Development, which will finance a promotion plan to attract the most qualified buyers from abroad, also in collaboration with the ICE Agency and its network of offices all over the world.

SATELLITE HALLS AND NEW SERVICES

As has been the case in the past, in 2018 Plast will again host the Rubber and 3D Plast satellite halls dedicated to the rubber and 3D printing industries respectively (and additive production technology), now permanent and successful features of the event. A new section will also be dedicated to innovative materials, including compounds, recycled materials, engineering polymers and more.

Exhibitor registration will open after K 2016 and new services will be available, as will be incentives for early registrations, including new incentives rewarding exhibitors registering by certain dates, which will be finalised in due course. Incentives are also confirmed, like in the past, for live demonstrations of machines, on the condition that the exhibitors register in a timely fashion, provide all the required technical information by a set date, and ensure that the machinery will be in operation for a suitable period of time during the event.

Fiera Milano will also provide concrete support to the organisers in an effort to offer even more innovative and usable services for exhibitors and visitors, as well as for the press. As early as 2017, all the halls will have Wi-Fi coverage free of charge to fair operators. Improvements are also scheduled for catering and reception services, travel and hotel reservations, and so forth.

For additional and updated information on Plast 2018, it is possible to visit the Assocomaplast stand A 56, in hall 16, at K in Düsseldorf, from October 16 to 23, 2016.

www.plastonline.org

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CHINAPLAS SHINES ITS SPOTLIGHTS AT K 2016

The 31st Chinese exhibition on plastics and rubber industries participates at the K fair in Düsseldorf (North Entrance 1 / 02) to promote its new highlights on intelligent manufacturing, high-tech materials and green solutions.

To remain competitive, manufacturers constantly strive to upgrade their production technologies and product quality, and "intelligent manufacturing" is one of the key strategies being adopted to enable such continuous improvement. By adding an "Automation Technology Zone" to its well-established "Machinery Zones", Chinaplas 2017 will present the latest smart manufacturing technologies to the plastics, rubber and end-user industries.

The global trend of pursuing a circular, low-carbon economy, combined with demand for ever-increasing product sophistication, is driving the need for high-tech materials. At the next edition of Chinaplas, more than 1,000 suppliers will showcase their latest offerings in this area, including advanced composites and high-performance engineering plastics. "Chemicals & Raw Materials Zone", "Composite & High Performance Materials Zone" and "Bioplastics Zone" will be particularly focused on high-tech materials.

Conserving resources and adopting eco-friendly materials and technologies are keys for business sustainability. To align with this trend, Chinaplas 2017 will display a wide array of green solutions applicable to different manufacturing industries, while also featuring a dedicated "Recycling Technology Zone".

More than 3,300 exhibitors and representatives from around the world, together with 12 country/region pavilions, will take part at Chinaplas 2017, which will be held on May 16-19 at China Import & Export Fair Complex, Pazhou, Guangzhou, PR China.

www.chinaplasonline.com

After being successfully introduced in 2016, the Automation Technology Zone will continue to present the latest intelligent manufacturing technologies at Chinaplas 2017

EXHIBITIONS & TRADE FAIRS

2016

October 25-27 - Euromold (Munich, Germany)
November 6-8 - CPPIA (Guangzhou, China)
November 8-10 - Feipur-Feiplar (São Paulo, Brazil)
November 8-10 - Filtration, Nonwovens Fabrics Industry (Philadelphia, United States)
November 8-11 - Ecomondo (Rimini, Italy)
November 14-17 - All4pack, ex Emballage (Paris, France)
November 15-17 - JEC Asia Pacific (Singapore)
November 15-18 - Formnext (Frankfurt, Germany)
November 16-19 - Plastics & Rubber Indonesia (Jakarta, Indonesia)
November 16-19 - DMP (Guangdong, China)
November 17-20 - Labelexpo India (Delhi, India)
November 18-20 - Plast Future East (Balasore, India)
November 28-29 - IMD (Bangkok, Thailand)
November 28-29 - 3D Printing Rapid Prototyping (Bangkok, Thailand)
November 28 - December 1 - Composites Europe (Düsseldorf, Germany)
November 30 - December 1 - Expoplast (Montreal, Canada)
December 4-7 - Plast Show (Rajkot, India)
December 5-7 - East Afripack (Nairobi, Kenya)
December 6-9 - Midest, the show for all industrial subcontracting know-how (Paris, France)
December 7-9 - Additive Manufacturing Americas (Pasadena, United States)
December 7-10 - Plast Eurasia (Istanbul, Turkey)
December 15-16 - WPC 2016, Wood Plastics Composites Expo (Bangkok, Thailand)
December 15-17 - International Packtech India (Mumbai, India)

2017

January 7-10 - Arabplast (Dubai, United Arab Emirates)
January 19-21 - India Rubber Expo (Chennai, India)
January 19-23 - Plastivision India (Mumbai, India)
January 24-27 - Interplastica (Moscow, Russia)
February 14-16 - Tire Technology Expo (Hannover, Germany)
February 15-16 - BiobasedWorld (Cologne, Germany)
February 22-24 - Plastics Vietnam (Ho Chi Minh City, Vietnam)
February 27 - March 2 - Saudi Plastics & Petrochem (Jeddah, Saudi Arabia)
March 1-3 - Sino-Pack & Packinno (Guangzhou, China)
March 7-11 - Koplas (Seul, South Korea)
March 20-24 - Plastico Brasil (São Paulo, Brazil)
March 21-23 - Oman Plast (Muscat, Oman)
March 23-25 - Mecspe (Parma, Italy)
March 29-30 - PRS, Plastics Recycling Show (Amsterdam, Netherlands)
March 29-31 - Compotec (Carrara, Italy)
April 4-6 - European Coatings Show (Nuremberg, Germany)
April 4-7 - Feiplastic (São Paulo, Brazil)
April 5-7 - VME Vietnam Manufacturing (Hanoi, Vietnam)
April 12-13 - Luxe Pack Shanghai (Shanghai, China)
May 3-5 - A&T, Affidabilità e tecnologie (Torino, Italy)
May 3-6 - Plastexpo (Casablanca, Morocco)
May 3-6 - P4 Expo (New Delhi, India)
May 10-11 - Luxe Pack New York (New York, United States)
May 16-18 - Plast-Ex (Toronto, Canada)
May 16-19 - Chinaplas (Guangzhou, China)
May 23-25 - SPS IPC Drives (Parma, Italy)
May 30 - June 2 - Moulding Expo (Stuttgart, Germany)
June 13-16 - FIP, Forum International de Plasturgie (Lyon, France)

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Key & Figures

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1.134 companies and company representatives from **47** countries
47.306 professional visitors from **107** countries
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China, Iran, Korea, Taiwan and UK

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EPSE AWARDS 2016

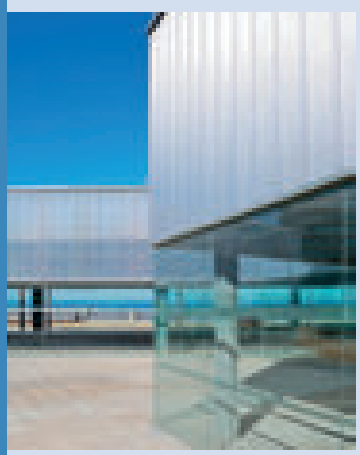
A COMPETITION TO PROMOTE POLYCARBONATE

On October 21, the 8th edition of the EPSE Awards will take place at the K Show in Düsseldorf. The aim of this event is to promote unique properties of polycarbonate and a wide array of applications in which it may be used. The European Polycarbonate Sheets Extruders Awards recognize projects made out of polycarbonate that are the most innovative, sustainable and with the best design. Polycarbonate is a material that can be easily worked and modelled, and therefore, it can be used virtually for any kind of application. It is widely used in the construction sector, mainly for big-size installations like stadiums, arenas or olympic venues. PC sheets are commonly utilized in engineering and among others in the automotive, electronics and medical industries. More recently polycarbonate caught the attention of interior architects & furniture designers, artists and number of other niche markets.

The projects submitted to this years' Awards are a perfect example of the intrinsic properties of PC sheets. They clearly demonstrate high impact & fire-resistance, durability, flexibility, lightweight and transparency of polycarbonate. There are 14 projects submitted to this years' competition including public buildings like stadiums, shopping malls, sport centres, hotels and swimming pools, and also art installations.

The winners will be announced during the EPSE Awards Ceremony at the K show in Düsseldorf at the Trinseo stand (E60, hall 6) that kindly supports the event.

There were two phases in the judging process. In the first step the jury panel judged the projects individually. The three best graded projects went on to the second step which was a public voting (it took place in September). The pre-selected projects were published on the EPSE website where the public voted on their favourite projects in each of the three categories. **www.epse.org**



Genoves Park - Winner in the sustainability category at the EPSE Awards 2015

MEETINGS & CONGRESSES 2016

Austria

November 15-17 - Vienna: Multilayer Packaging Films - AMI (www.amiplastics.com)

Brazil

November 8-10 - São Paulo: Sampe Brazil Congress - Sampe (www.sampe.com.br)

United Arab Emirates

November 7-10 - Abu Dhabi: Adipec (The Abu Dhabi International Petroleum Exhibition and Conference) - DMG Events (www.adipec.com)
December 5 - Dubai: Plastics in Africa - AMI (www.amiplastics.com)

Germany

November 7-8 - Nuremberg: Petnology Europe - Petnology (www.petnology.com)
November 7-9 - Cologne: Waterproof Membranes - AMI (www.amiplastics.com)
November 8-10 - Cologne: Polymer Foam - AMI (www.amiplastics.com)
November 28-29 - Düsseldorf: International Composites Congress (ICC) - AVK (www.composites-germany.org)
November 29-30 - Berlin: European Bioplastics Conference - European Bioplastics (www.european-bioplastics.org)
November 29 - December 1 - Cologne: Thin Wall Packaging - AMI (www.amiplastics.com)
November 30 - December 1 - Cologne: Silicone Elastomers - Smithers Rapra (www.smithersrapra.com)
November 30 - December 1 - Cologne: Thermoplastic Elastomers - Smithers Rapra (www.smithersrapra.com)
December 6-8 - Cologne: Fire Resistance in Plastics - AMI (www.amiplastics.com)
December 7-8 - Frankfurt: Maximising Propylene Yields - ACI (www.wplgroup.com/aci/event/maximising-propylene-yields)
December 13 - Cologne: 3D Printing for Plastics Processors - AMI (www.amiplastics.com)
December 14 - Cologne: Industry 4.0 for Plastics Processors - AMI (www.amiplastics.com)

India

December 5-8 - Bangalore: India Rubber Industry Forum 2016 - TechnoBiz (www.technobiz-india.com)
December 8-9 - Mumbai: PAM (Polymers Additives Masterbatches/compounds) - SPE India (www.speindia.org)

Indonesia

November 16 - Jakarta: ChemOrbis Indonesia Petrochemicals Conference - ChemOrbis (www.chemorbis.com)

Spain

November 7-11 - Barcelona: Rubber Processing Week - TechnoBiz (www.technobiz-europe.com)

United States

November 8-10 - Philadelphia (Pennsylvania): Filtration 2016, International exhibition and conference about fibres and non-woven - Inda (www.inda.org)
November 15-16 - Houston (Texas): Pipeline Coating & Protection - AMI (www.amiplastics.com)
December 6-7 - New Orleans (Louisiana): Stretch & Shrink Films - AMI (www.amiplastics.com)
December 7-9 - Pasadena (California): Additive Manufacturing Americas - Tarsus (www.amshows.com)
December 13-14 - Philadelphia (Pennsylvania): Compounding World - AMI (www.amiplastics.com)

Thailand

December 15 - Bangkok: Injection Moulding & 3D Printing Conference - TechnoBiz (www.plasticsprocessing-expo.com)
December 16 - Bangkok: Composites & Wood Plastics Conference - TechnoBiz (www.plasticsprocessing-expo.com)

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