

KUHNE NEWS

KUHNE GROUP

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www.kuhne-group.de

SmartSheets®

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The cooperation with German major customer continues.

KUHNE and the German based Müller Milch group have a long, successful history. Optipack, a group member and the production facility with headquarters in Leppersdorf and Aretsried, Bavaria, is mainly producing packaging for the internal dairy industry out of PS and PP. Several KUHNE extrusion lines are in production – one of them a now 34 year old machine, that had been installed beginning of the eighties and is still perfectly working.

Now a brand-new KUHNE extrusion line will be delivered to Bavaria this year. The advantages for the Müller Milch group are obvious: Two identical water-cooled High Speed extruders, with space- and energy saving torque drives, guarantee a redundant production. The focus on energy saving also shows in thermal isolation – normally an option; now a standard. The line has been specially designed to fit exactly into Optipack's production hall with minimal space requirements. At the same time, it remains easy and ergo-

nomic to operate; all that with a production capacity of more than 1 ton PP per hour. Of course the line will be equipped with the latest state of the art operation and visualisation concept HMI Tiaportal.

The KUHNE extrusion part will be working inline with an ILLIG thermoforming machine K75, allowing high production cycles. So there will be a continuous, logical production process from the raw material until the finished packaging product, that can be filled and closed.



www.optipack.de
www.muellermilch.de



Our experience is your future The KUHNE die celebrates its 60th anniversary

1957: The movie legend Humphrey Bogart dies, Albert Camus wins the Nobelprize for Literature and Russia sends his first artificial earth satellite – the famous Sputnik – into space.

The first KUHNE patent for the so called „coat-hanger“ die dates from that year. For the first time a special geometry was used, which meanwhile is used in many thousands of dies. While the first prototype was relatively narrow – only 200 mm width – KUHNE Smart Sheets® did continuously develop its dies, until in the beginning of the seventies the first die with a width of more than 1000 mm was sold.

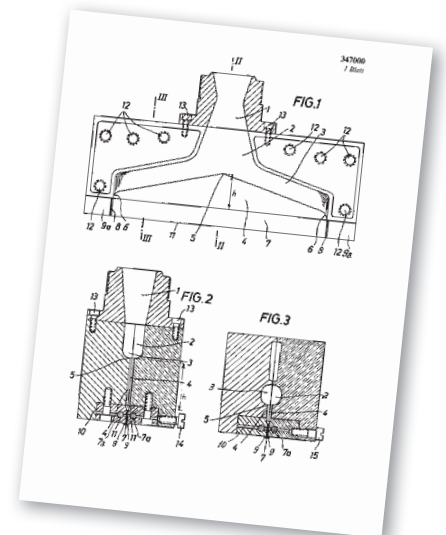
KUHNE also quickly evolved in terms of the thickness range: In 1974, first sheet extrusion dies for HD-PE and PP were presented. Meanwhile thicknesses up to 50 mm are not a problem anymore, but a standard. In the range of polyolefines the dies have been improved also through the cooperation with the two of the best-known sheet producers in Germany:

Working with huge lip openings (up to 75 mm / 3 inch) request that the material also is led to the edge area of the die; as the counter pressure is quite low. The patented knowhow of KUHNE solved this problem in hundreds of dies. In order to cover wide applications, it is meanwhile possible to even install decking systems of up to 600 mm per side in HD-PE dies. Of course without having too much material coming to the sides.

Also for the production of automotive tank sheets, (6-10 mm thick) which are produced, thermoformed and welded together through the so called „twin-sheet“ process, KUHNE has already delivered and started several turn key lines with corresponding sheet dies.

Even more fields of application are skins and container, the interior of fridges and freezers, optical sheets or plates for external building facades, which are coated with aluminium from both sides – just to mention a few.

But KUHNE does not rest: Since a few years the automatic die with thermo bolt control in combination with a thickness measurement and -control is used and from 2018 on, Smart Sheets® will offer dies with internal decking blades, which can be adjusted during production.



More than just packaging

KUHNE announces another major order for the production of edge bands out of PP and ABS

Since decades KUHNE Smart Sheets® has been setting the tone in the field of (food) packaging business – but not only there; although still a huge part of our extrusion lines is being designed for that specific application. Also in the segment of technical films and sheets, KUHNE offers tailor-made solutions, that later on produce successfully and the final products are considered top of the range in terms of quality and innovation.

The latest example are edge bands, made out of ABS or PP, which are used in the furniture industry. Four out of five of the biggest european producers, whose products are delivered to furniture shops all over the world, put their faith already in solutions from Smart Sheets®. Three of them did not stop with one KUHNE line, but meanwhile have their second, third or even fourth machine.

The quite narrow bands are available in thousands of different colours and designs. Therefore the required films have to pass numerous stations after coming from the cooling section of the KUHNE roll stack. This can be a primer station, a coating or/and corona unit, a UV treatment, drying unit or a lamination system. These devices, all integrated inline, make it possible to later only cut the wound rolls – normally between 500 and 700 mm wide – in order to get the finished product, ready to sell.

The lines are equipped with a feeding and gravimetric dosing system. A drying system is recommended, too, because of the humidity taking ABS material. For the same reason, the extruders are ven-

ting machines. A special drilling in the screw allows to additionally dose a liquid colour into the process. This can also be achieved at the filling pipe or just before the die. Screw and barrel are executed in specially hardened design in order to have protection against abrasive additives. Although most of the edge bands are still produced mono, KUHNE offers the integration of a feedback dummy in order to prepare later coextrusion.

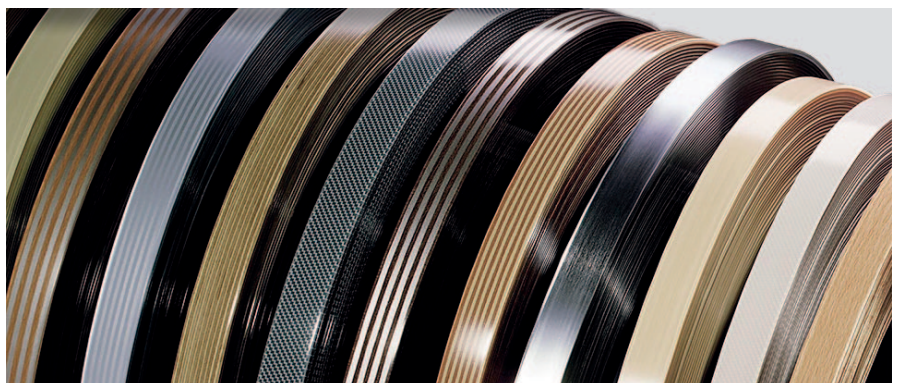
In order to guarantee an outstanding thickness tolerance of these bands; the thickness is normally between 0,4 and 2,5 mm; the lines are designed with an automatic die, a thickness measurement and regulation. The numerous, different designs and decors require a fast product, and therefore roll change. KUHNE Smart Sheets® offers features such as a pull-off device, a fast coupling, split bearings and rails, on which the cylinder can scroll forward and then be lift off. That is how multiple roll changes within one day are possible, without reducing the availability of the line. Idle rollers ensure a wrap of more than 90°, so that the radius does not get too tight, which could lead to cracks on the outer or deformations on

the inner side of the roller. Several post cooling rollers, all individually driven and cooled, round off the cooling concept of KUHNE.

A variety of different winding concepts is available – from a standard two station winder up to fully automatic turret winding systems. A new line – to be delivered to an european customer in September – will be equipped with such a unit. Edge- and cross cutting, the roll change, the possibility of pre-cutting samples off the roll and even to pack the finished roll – all these functions are executed automatically.

The customers of these bands are more and more focusing on products made from PP. The density is lower as ABS, the raw material often cheaper, PP does not attract humidity and is even in terms of smell more neutral. The KUHNE extrusion line allows to process both materials with the same product quality without having to change the machine configuration.

Only in 2017 KUHNE received two huge orders for corresponding machines. Both will be delivered to different customers in europe within this year.





PET production: Higher demands lead to better results

KUHNE & Austrian machine supplier NGR start successful collaboration

The market demand for PET films has been rising continuously for years. Besides excellent film properties such as transparency, rigidity or natural barrier, PET simply also is available through its post consumer bottle flakes. This is why more and more PS applications are being replaced by PET – not only; but mainly in the packaging business.

There are multiple ways of producing PET films and to deal with the hygroscopic characteristics of the material in an appropriate way – some of them technically quite different. Among these are twin screw extruders – conical and non-

conical, pre-dryers – with Infra Red Drying systems or alternatively classical hot air drying and crystallizing, special extruder executions and reactors – just to name a few. All these solutions – and more – have been successfully implemented by KUHNE in the market since the year 2000. Doing that, we always focus on the specific customer requirements.

Since 2016, there is an additional, innovative solution for the production of PET films: The Austrian machine manufacturer NGR, worldwide known for their recycling lines, has developed the P:REACT – LSP system. LSP stands for Liquid state

polycondensation and is unique for a number of reasons: It is now possible to process all known PET types and forms in all shapes and densities. These are not only the well known flakes, but also fibres, textiles, thermoforming grids or non-wovens.

The materials are being homogenised by means of a shredder, transport and extrusion combination; regardless of their initial humidity. It has been proven that even the use of a high PE percentage is possible – despite the installation of a single screw extruder. Thermal degradation is avoided and no problem. A highly effective



tive, inhouse developed vacuum system is provided by NGR. Then the melt passes a two-stage reactor. Decisive and unique at the same time is the fact that this happens in a liquid state. Advantages are for example the energy saving and cycle time. A further particularity is the possibility of not only constantly measuring the IV value, but also increasing it up to 25%. The system is of course FDA approved, the EFSA certification will follow soon, and it allows to produce PET packaging films without coextrusion. Black spots, often a problem in the production, are nowhere to be found – even when using 100% undried bottle-flakes.

Followed by the second reactor and melt pump, KUHNE takes over with the proven, well known down stream equipment: static mixer, KUHNE-patented feedblock in case of coextrusion and the corresponding die – available in manual or automatic version. The KUHNE PET roll stack can be executed inclined or horizontal; depending on the desired final thick-

ness of the film. KUHNE Smart Sheets® offers electric, as well as hydraulic roll adjustments and has implemented both already in the market.

The thickness measuring unit – or even regulation – is placed shortly behind the roll stack. Options such as Inline lamination of PE films with excellent adhesion values; inspite of high line speeds and without the need of a primer, a silicone spraying unit with integrated drying system or the possibility of producing rigid and foamed PET sheets in the same line can follow. Finally, the winding unit is available from a standard, two station winder with accumulator up to a fully automatic turret winder for up to four webs and automatic roll handling.

All advantages at a glance:

- Fast change over and throughput times
- FDA and pending EFSA certification
- Control and increase of IV
- Usage of high PE percentages possible
- No pre-drying needed

- Processing of almost all common PET forms
- Coextrusion for packaging applications may be spared
- High performance cooling systems and production of high thicknesses
- Inline PE lamination available
- Silicon spraying unit with drying
- Highly transparent, high quality PET films by using 100% bottle flakes

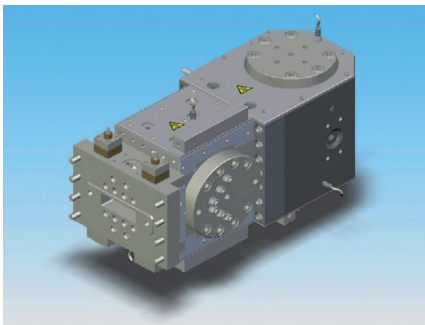
The NGR-KUHNE concept addresses customers who consider the mentioned points important, giving them the chance to get ahead of their competitors. Trials, tests and demonstrations of the LSP in combination with KUHNE equipment with customer material in Feldkirchen, Austria are possible.



www.ngr.at
www.kuhne-group.com

Barrier films overcome barriers

KUHNE supplies another multi-layer line to Middle East



7-layer feedblock KU7;
expandable to 9 layers

Since food is being packed, knowing the shelf life time plays a decisive role regarding the development of new packaging solutions. Furthermore, the changing lifestyle of many consumers influences the innovations concerning new packages in terms of smaller sizes, finished dishes and frozen food. All that takes place with a strong focus on a longer shelf life of the packaged goods.

KUHNE offers its customers technological high-sophisticated solutions in that product segment with multi-layer extrusion lines with up to 11 layers. Popular applications are meat-, coffee- or teapackages. In that field only, KUHNE Smart Sheets® delivered 21 lines to three worldwide acting customers within the past 10 years.

At the moment, we design a 9-layer sheetline in collaboration with a new customer from middle-east, a machine for barrier applications and an additional sealing layer for the later processing in thermoforming. The line is capable of producing multiple barrier configurations with PP, PS and/or PE. With a maximum net width of 1.500 mm and an overall output of 1,5t/h, an annual capacity of more than 10.000 tons can be achieved. A specialty of KUHNE Smart Sheets® is the use of melt pumps even for small extruders. Therefore a continuous pressure constance of all layers is guaranteed. The highly sophisticated 6-station winding unit allows the production of up to 3 webs at the same time.

The order sets yet another milestone of KUHNE's strong market presence in the Near- and Middle East region. There is a continuous growing demand for technically sophisticated films and the extrusion lines to produce these. Consequently, we participate in the **Iranplast 2017 from September 24th to 27th**. Please find us within the German Pavillon.

Simultaneously, KUHNE develops with another customer from overseas a multi-layer film for portion packaging with long shelf life.

In all of these projects, the KUHNE patented feedblock technology is used, along with the long-standing, well-proven High-Speed Extrusion. Our feedblocks in bolt, respectively lamella execution guarantee easy operation with excellent tolerance values and outstanding layer distributions at the same time – also with larger film widths. This is how our customers succeed in avoiding waste of expensive EVOH and still have the certainty to reach the required barrier effect. The High Speed Extruders – implemented by KUHNE for nearly a decade – work without gear and belt and continue to be highly accepted. Space and energy savings as well as a low-noise production by means of water-cooling are the main reasons to choose this extruder type for PP, PS and PE.



IRAN PLAST

THE INTERNATIONAL EXHIBITION OF
PLASTICS RUBBER, MACHINERY & EQUIPMENT

24-27 SEPTEMBER, 2017

TEHRAN INTERNATIONAL PERMANENT FAIRGROUND

In the tracks of Fernão de Magalhães

KUHNE Smart Sheets® intensifies successfully its market presence in Latin America

Since 2007, KUHNE GmbH strengthened all of its activities in Middle- and South America.

With the support of new agencies and partners and the development of customized, tailor-made machine solutions designed for the local market, the presence and turnover could significantly be increased.

Participations at regional plastic and packaging shows are also part of that market strategy. KUHNE for example took part at the Feiplastic show in Sao Paulo, Brazil, beginning of April in order to strengthen its presence in the fast growing Brazilian market. In addition to numerous qualified visitors and new contacts, last details of an upcoming project with a long standing customer, the Grupo Ultra, have been finalized.

The order includes a coextrusion line with high speed extrusion for the offline production of PP films. The machine reaches a total output of 1.300 kg/h and will be equipped with the new, high efficient cooling system Smart Sheets®. For Grupo Ultra, based in the province of Alagoas in the North of Brazil, this will be their third KUHNE line within only three years after previous inline machines had been installed.

Founded back in 1984, Grupo Ultra is a privately owned company under the leadership of Sr. Wellington Veiga Pessoa with now 800 employees and a production volume of above 2.500 tons per month. The main focus are thermoforming products made of PS, PP and XPS.



From left to right: Francisco Cordeiro und Evandro Saraiva, SaraPlast (Agency Brazil KUHNE GmbH), Angela Maciel, Kathrin Bunje, Area Sales Manager KUHNE and Wellington Veiga Pessoa, Grupo Ultra

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Online anytime with KUHNE

New control & visualisation systems set the trend

The trend to supply information in a mobile way regarding production is obvious.

The adaptation of the Human Machine Interface (HMI) to the respective process and its setting is the key, as mobility and flexibility constantly become more important.

KUHNE Group in collaboration with its long-term partner SIEMENS takes that into consideration and is working on new standards concerning the control and visualisation of their extrusion lines.

More than 30 years ago, the former B&R panel concepts were put to rest with the start of the collaboration with SIEMENS. Emerging from that were developed the world of S5 and later S7. With each machine generation though, the functionality and scope of functions rise. By consequence, the actual operating surfaces and concepts were terminated 2015 – although KUHNE keeps offering service, maintenance and the repair of existing panels and software, of course.

Now features such as widescreen or multitouch are in focus and assure a perfect operating comfort. At the same time, the format changes from 4:3 to 16:9 – all in high resolution HD.

Furthermore to that development, that mainly came from outside towards KUHNE Group, we as a machine manufacturer and supplier have committed ourselves to bring together the control units, visualisations and operating concepts of both companies – KUHNE Maschinenbau and Anlagenbau (flat film and sheet lines on one side and blown film lines on the other). By doing that, mask screens and presentations are set up in a new and state of the art way with a user-interface industrial designer.

new world of software that combines all former S7 Manager and WinCC programs.

From now on, KUHNE Group offers three different visualisation concepts, all of them designed as touch panel solution:

- TP1200 for single extruder (replaces the OP)
- TP2200 for complete flatfilm-, blown film- and sheet lines (replaces the MP)
- TP2200 BoxPC (replaces the KEC, resp. the KEC-B)

The first lines within the TIA portal world are delivered and installed in summer of 2017. Your KUHNE service and sales team will gladly be at your disposal for any questions or comments.



The combination of widescreen, multitouch and even gesture control result in a platform, that allows completely new, interactive ways of control: Navigation or data input for example will change, in order to better control and manage processes. Especially operating mistakes and non-wanted choices shall be avoided or minimized. The new mobility also allows the password-secured query of many values via all common smartphones – only by means of an active internet connection.

The definition of the so called TIA portal (totally integrated automation) will arise more frequently in the near future. It describes the

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