SIKORA EXTRA

Hose and Tube Magazine

Thank you for a very successful K 2016

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Next Events

- Qualitätsgipfel Kunststoff
  Nov 28 - 30, 2016
  Würzburg, Germany
  Lecture 1: CENTERWAVE 6000
  Lecture 2: PURITY SCANNER

- VDI Fachtagung – Extrusion von Rohren und Profilen
  Dec 6 - 7, 2016
  Nuremberg, Germany
  Lecture: CENTERWAVE 6000

- Arabplast 2017
  Jan 8 - 10, 2017
  Dubai, UAE
  Booth: 5 C115

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f.l.: Dr. Christian Frank, Harry Prunk

Dear customers, partners and business friends,

Customer benefit is one of SIKORA's company key issues. Regarding process stability, high quality standards or efficiency – we ensure your production.

Process reliability is only guaranteed by the continuous monitoring of the production parameters. SIKORA offers an extensive program of measuring, control, inspection, analysis and sorting devices specially developed for hose and tube, respectively plastic production lines. Each of these devices and systems contributes to quality assurance and therefore, to process assurance and decrease of production costs. We would like to cordially thank all visitors of the SIKORA exhibtion booth at the K 2016 and hope that you discovered how you can make your production more efficient.

SIKORA is known for high quality standards. For more than 40 years we have been producing innovative products with the highest quality at our headquarters in Bremen, Germany. We monitor the market permanently, discover new challenges, trace the development of industrial trends and implement them in our devices and systems.

Reliability of measuring devices in the production line is an important factor. At any time, measuring and control devices need to provide reproducible and precise measuring values in order to guarantee the best possible production results. Perfection during the manufacturing process also places high demands on the staff. In this respect, we have developed special training programs for your employees. Learn more on page 9.

Enjoy reading!
Sincerely,

Dr. Christian Frank
CEO SIKORA AG

Harry Prunk
Board member SIKORA AG

SIKORA AT THE K 2016

Innovations on the SIKORA exhibition booth

For plastic manufacturers and processors, the K in Düsseldorf, Germany, was the event of the year. From October 19th – 26th, 2016, the topics of plastics and rubber were essential. Whether for the plastic manufacturing and processing or for quality assurance – at the international trade fair future-oriented technologies took center stage. At the K 2016, SIKORA exhibited its portfolio of products for the areas measuring, control, inspection, analysis and sorting technologies for the quality enhancement, process optimization and cost reduction.

At the K Preview, from June 27th – 29th, 2016, editors of approximately 100 international publications for the plastic and rubber industry have already been inspired by the SIKORA portfolio.

At the SIKORA booth there were four exceptional devices celebrating their premiere. The innovative CENTERWAVE 6000, precisely and without contact measures on the basis of millimeter wave technology. The inner and outer diameter, ovality, wall thicknesses and the sagging of large plastic tubes with a diameter from 120 to 2,500 mm is measured online during the extrusion process. Furthermore, SIKORA presented the PLANOWAVE 6000 for process optimization in sheet extrusion. This system also uses the non-destructive millimeter wave technology and measures the thickness of plastic sheets.

A further innovation is the online inspection and sorting system PURITY SCANNER ADVANCED. The system combines, similar to the the PURITY SCANNER, X-ray technology with an optical system and detects contamination inside the pellet as well as on its surface. Groundbreaking is the flexible camera concept. Depending on the type of contamination and the application, the system can be equipped with up to 5 different cameras.

The PURITY CONCEPT Systems, for the offline inspection of plastic materials, offer a broad variety of applications due to the variable camera concept. These systems are typically used in a laboratory for the inspection and analysis of pellets, flakes and films/tapes or for sample testing. With these show novelties the Bremen-based technology company offers an interesting portfolio for the extrusion of hoses, tubes and sheets as well as for the inspection and sorting of plastic pellets.

Find more information about these and other K highlights on the following pages.

SIKORA booth at the K – Hall 10 Booth H21

CENTERWAVE 6000

Quality assurance during the extrusion of large tubes

Perfection by innovation during the manufacturing of plastic tubes with diameters from 120 to 2,500 mm* and large wall thicknesses provides impressive advancements for product quality and reduction of material costs. Norms and standards define exactly the minimum and maximum permitted diameter and wall thickness for a certain pipe dimension and require reproducible processes. To master these standards and the increasing requirements for pipe extrusion, the usage of innovative measuring and control systems during the production process is necessary.

Millimeter wave technology: Precise, efficient, perfect

The innovative SIKORA CENTERWAVE 6000 measures the inner and outer diameter, the ovality, the wall thickness and the sagging of large plastic tubes precisely. The measuring method does not need any coupling mediums and is independent of influences like the temperature and the material. The application spectrum of the CENTERWAVE 6000 includes the measurement of single and multi-layer tubes. Simple handling and high precision result in the highest quality of the end product as well as cost savings and higher efficiency.

Function

The measurement via millimeter waves is based on the FMCW** runtime method. One or two continuously rotating transceivers continuously send and receive frequency modulated millimeter waves. The inner and outer diameter, ovality, wall thickness and sagging are defined by the runtime difference.

The CENTERWAVE 6000 R, with a rotating gauge head, is used when the measurement of the wall thickness around the complete circumference is required. This model is able to detect and visualize the sagging precisely. Alternatively, a static system measures the wall thickness as well as the inner and outer diameter of the tube selectively with two transceivers at four points of the circumference.

Application areas

The CENTERWAVE 6000 is qualified for the measurement of single and multi-layer plastic tubes with a diameter from 120 to 2,500 mm, which are for example used for transporting water, gas, chemicals and oil. Tubes made of all known plastics, such as PE, HDPE, PP, PA6, PVC etc., can be measured. The measuring system provides precise measuring values for all applications.

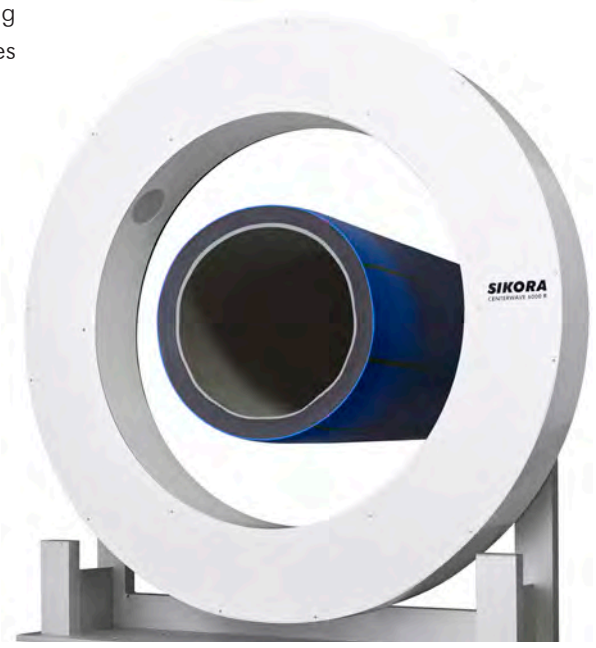
Your advantages

- Simple handling without presetting the product parameter
- Measurement is independent from material and temperature
- Precise measuring values directly after the start of the line
- Reliable without calibration

The measuring system guarantees

- Assurance of the tube quality
- Reduction of excessive material consumption
- Decrease of the scrap rate
- Time and cost savings
- Increase in productivity

The measuring values of the CENTERWAVE 6000 are clearly displayed at the ECOCONTROL 6000



CENTERWAVE 6800 R

*smaller/larger diameter on request
**Frequency Modulated Continuous Wave Radar

PLANOWAVE 6000

Innovative millimeter wave measuring system for quality assurance during sheet extrusion

The PLANOWAVE 6000 is a non-contact measuring system that is used for the non-destructive measurement of the thickness during the extrusion of plastic sheets. The system is designed for the measurement of all plastic materials, such as PE, HDPE, PP, PA6, PVC etc.

Innovative millimeter wave technology offers a precise measurement of the thickness without any coupling mediums and independent of material and temperature of the plastic sheet. Calibration is not necessary.

The PLANOWAVE 6000 can either be integrated into the production line directly or used for the final inspection. The sheet is measured via millimeter waves based on the FMCW* runtime method. A linear moving transceiver continuously sends and receives frequency modulated millimeter waves. The thickness of the sheet is defined by the runtime difference.
Visualization of the measuring values is made in real time. The processor system ECOCONTROL offers a numeric display of the measuring values as well as a graphic display and comprehensive trend and statistical data.

The PLANOWAVE 6000 contributes to the reproducibility of processes as well as the highest quality and productivity during the sheet extrusion.

*Frequency Modulated Continuous Wave Radar

Your benefits

- Non-contact online measurement of sheet thickness via innovative millimeter wave technology
- Complete measuring system for integration into the production line
- Simple handling without presetting the product parameter
- Measurements are independent of material and temperature, without coupling mediums
- Precise measuring values are available directly after the start of the line
- Reliability without calibration
- Assurance of the sheet quality
- Reproducibility of the processes and highest productivity

PLANOWAVE 6000

INSPECTION AND ANALYSIS OF PLASTIC PELLETS – ONLINE / OFFLINE

PURITY CONCEPT Systems: Development of the laboratory analysis devices

SIKORA devices stand for the highest precision and absolute perfection. The purity of the material is an important criteria at plastic production and processing. SIKORA's program of innovative inspection, analysis and sorting devices inspects raw plastic material and detects impurities inside the pellets as well as on their surface.

Online Analysis

The SIKORA PURITY SCANNER for the online inspection and sorting of plastic pellets has been successfully integrated into production lines worldwide. Plastic manufacturers, processors and end users use this innovative device, that uniquely combines X-ray and optical technologies, to check their plastic material online for contamination. Contaminated material is automatically sorted out.

Offline Analysis

For smaller throughputs as well as production lines where sample testing is efficient or for the control of incoming goods, SIKORA developed the PURITY CONCEPT Systems. The analysis devices can be equipped with X-ray technology as well as optical sensors or infrared technology. They detect contamination in pellets, flakes and films/tapes.

The PURITY CONCEPT X has a tray on which up to 3,000 pellets can be placed. Within a couple of seconds, these pellets are inspected for contamination. Subsequently, contaminated pellets are optically highlighted which makes the extraction of the individual contamination significantly easier.

The Combination for Perfection

SIKORA recommends the combination of the PURITY SCANNER and PURITY CONCEPT X for a comprehensive process optimization. After the PURITY SCANNER has successfully detected and sorted contaminated pellets, these pellets are then again checked and individually highlighted by the PURITY CONCEPT X. This perfect interaction of online and offline inspection and analysis enables the absolute control of the material purity as well as knowledge to prevent future contamination.

PURITY CONCEPT X mit Tray

FURTHER K 2016 HIGHLIGHTS

Discover SIKORA's innovative portfolio

X-RAY 6000/6000 PRO

For continuous quality control directly during the extrusion of hoses and tubes the X-ray measuring devices X-RAY 6000 and X-RAY 6000 PRO are the optimal solution. Both systems provide precise and reliable measuring values regarding the diameter, wall thickness, eccentricity and ovality for a reproducible product quality. Up to three layers of different materials are measured with the PRO and, with the automatic control of the line speed or extruder rpm, are optimally adjusted to achieve the maximum productivity. The measuring devices X-RAY 6000 and X-RAY 6000 PRO cover diameter ranges from 0.65 to 270 mm.

X-RAY 6120 PRO

LASER 2100 XY

LASER 6080 XY

LASER Series 2000/6000

The LASER Series 2000 and LASER Series 6000 devices are important components for diameter control to the highest perfection in thousands of extrusion lines. The devices distinguish themselves by their high precision, reliability and continuous functionality without any calibration or maintenance times. Additionally, the LASER Series 6000 offers integrated lump detection, the measurement of tranparent products as well as a high measuring rate of up to 5,000 measurements per measuring axis, per second. Furthermore, discover the unique non-contact and non-destructive laser measuring principle, the intelligent design as well as the varied application possibilities of the LASER Series 2000 and LASER Series 6000 gauge heads.

LUMP 2000 XY/T

With the LUMP Series 2000, SIKORA offers a spectacular measuring technology for the detection of lumps and neckdowns in two or three measuring planes. The core of the devices is the innovative double sensor technology that reliably detects irregularities such as lumps and neckdowns on the product surface.

LUMP Series XY/T

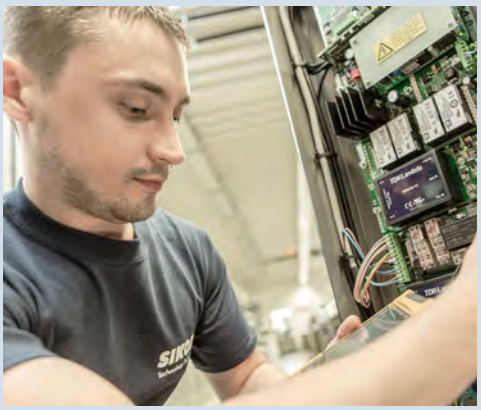
SIKORA TRAINING

SIKORA Trainings for the optimization of your production

No one knows your production line better than the people working with it every day. Additionally, no one is faster on site, if a repair or maintenance tasks should be necessary. Therefore, SIKORA offers tailor-made training for employees who are responsible for the maintenance and fault detection directly at the plant.

Starting at theoretical basics regarding the measuring principle, to practical exercises and a detailed fault detection with the aid of troubleshooting lists – within 2-3 day trainings SIKORA service engineers provide a professional insight to the technology of the measuring, control, inspection, analysis and sorting systems.

Find your suitable SIKORA Training at www.sikora.net/service/trainings – for example: the training on the X-RAY 6000/PRO & ECOCONTROL 6000 – and sign up today.



SIKORA service engineers explain how to use the X-ray measuring device X-RAY 6000 PRO even more efficiently

Training – X-RAY 6000/PRO & ECOCONTROL 6000

Duration	3 days
Location	SIKORA AG – Bremen, Germany
Target group	Technical employees
Participants	Min. 3/Max. 6
Languages	German, English

- ✓ Device presentation
- ✓ Basics X-ray technology/measuring principle
- ✓ Device commissioning
- ✓ High-voltage/cooling water supply
- ✓ Overview modules incl. LED status and testing points
- ✓ Manual chapter "Maintenance & Fault detection"
- ✓ Diagnosis software - device parameters at a glance
- ✓ ECOCONTROL 6000 Software
- ✓ Interfaces
- ✓ Preventive maintenance
- ✓ Device check with a troubleshooting list
- ✓ Searching and fixing simulated errors

Sign up today!

INNOVATIONS OF SIKORA

Review of the K 2016 with Dr. Christian Frank, CEO SIKORA AG

Dr. Christian Frank

Dr. Frank, three years ago you started working with SIKORA as a member of the board. During your first year the K 2013 has taken place as well, where SIKORA presented many product novelties for the hose and tube as well as the plastic market. What did SIKORA present this year to their visitors?

With measuring devices on the basis of X-ray and laser technology for smaller diameters, SIKORA is well-positioned in the hose and tube market. With the millimeter wave technology of the CENTERWAVE 6000, explained in this EXTRA, we put the focus on the large tube segment. That means, manufacturers of large tubes are provided with an innovative technology for compliance with specifications, for quality assurance due to stable and reproducible processes and for increase of efficiency.

Are there other application areas for the millimeter wave technology?

The millimeter wave technology is also suitable for the measurement of the thickness of plastic sheets during extrusion. At the K 2016, we presented the sheet thickness measurement device PLANOWAVE 6000 for the first time. It basically uses the same millimeter wave technology as the CENTERWAVE 6000 described on page 5. The difference is the movement of the transceiver. Instead of a rotating transceiver, a linear moving transceiver measures the thickness of the sheet during the production.

At the K 2013, SIKORA introduced a system for the inspection and sorting of pellets. How does the development of this unique innovation based on X-ray and optical technology look today?

We see that the PURITY SCANNER, which was developed initially for the online inspection and sorting of plastic pellets, especially for the cable industry, is highly demanded by the customers of the plastic industry. To properly react to every requirement of our customers in this market, we developed the PURITY SCANNER ADVANCED with a flexible, adaptive camera concept. Depending on the application and the type of contamination, the system can be equipped with infrared and color cameras to detect cross contamination. Furthermore, we offer our customers the PURITY CONCEPT Systems, which are typically used in a laboratory or offline for the inspection and analysis of pellets, flakes and films/tapes. In short, visitors of the SIKORA exhibition booth discovered an innovative firework of measuring, control, inspection, sorting and analysis systems.

Dr. Frank, thank you for the interview.

RAFFLE

Find the errors

There are 5 errors in the upper picture of the PURITY SCANNER in the in-house clean room at SIKORA.

Find all errors and send us a picture of your solution per e-mail to communications@sikora.net.

Send us an e-mail with a picture/scan of your solution until December 9th, 2016 to:
communications@sikora.net

PHILIPS Bluetooth In-Ear Headphones
(picture similar)

Each correct answer takes part in the raffle. Employees of SIKORA AG and SIKORA Holding GmbH & Co. KG and their relatives are not allowed to participate. Each player can only participate once. We value the first e-mail, all subsequent e-mails will be considered invalid. The legal process is excluded.

Good luck!

Congratulations to the winners!

- Dennis Czapla
- Joseph Maraite
- Tim Jensen

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