

# STÖBER DIRECT

STOBER CUSTOMER INFORMATION

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## Material recycling requires and promotes innovation

Polymer plastics made of slightly soiled production waste and heavily soiled plastics from the "dual system" can be reused in recycling processes.

To be able to mix even heavily soiled plastics with an extrusion melt, Ettliger Kunststoffmaschinen GmbH developed an innovative melt filter.

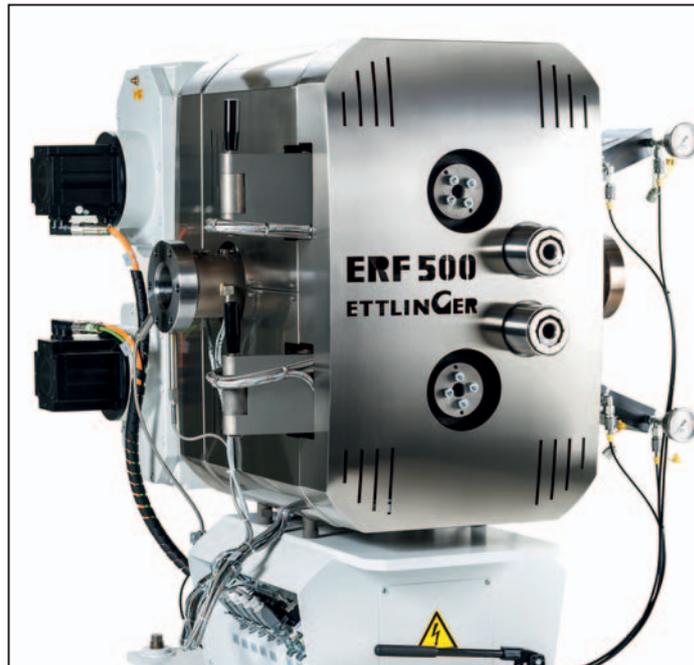
This new melt filter makes it possible to filter the melt without interruptions and at constant pressure, even when there are large fluctuations in the pollution degree of the melt.

### Filtering without interruption

The rotating filter drum is cleaned mechanically during every revolution. Then it is flooded from the outside to the inside. Impurities and external particles that are hard to handle such as paper, paint or aluminum can be reliably separated with the system. They remain on the outer edge of the rotating filter sieve and are lifted from the stripping unit and fed into the discharge worm with every revolution of the drum.

Filter drums with several million conical laser holes measuring between 80 and 500 micrometers in diameter are used depending on the material and pollution degree of the plastic.

Because the filter is continuously cleaned during the entire production process, conditions on the filter remain constant, as does the quality of the cleaned polymers. There is no increase in pressure due to a growing filter cake and when the filter is changed there are no disruptions in production caused by air being introduced, as is the case for example in multiple piston screen changers.



The ERF filter unit offers exceptionally high debris removal and can be integrated into any existing extrusion line

### Melt pressure is the determining control parameter

A process that runs in a stable manner over time is indispensable for uniform filtration results in the melt. If the pollution degree of the initial material fluctuates, for example, it must be compensated for by controlling the filter drum and discharge shaft in order to run the process in the optimum range.

If the pollution degree fluctuates in the input, the speed of the drum is automatically adjusted.

The cleaning process of the rotating filter ensures a constant, adjustable system pressure that can range up to 280 bar depending on the material and soiling level. Thanks to precise control of the process, the melt filters ensure that unwanted gels and extraneous elastic particles do not pass through the filter, resulting in impurities.

neers had fairly specific ideas regarding the performance profile for a new generation of drives for the new ERF series. With the super-compact EZ synchronous servo geared motors and its consistent focus on service, STOBER is able to offer a complete solution package, with impressive practical results.

"Consulting and competent support are enormously important for us in every new project. That's where we know STOBER is fully on our side," explains Thorsten Ettliger, one of the Managing Directors. "We always have the same contacts with STOBER, who are familiar with our designs and are ready to offer advice and support from the design phase to commissioning and in the case of service calls. It is important for us that they are not only capable of parameterizing drive controllers, but can also accurately estimate the results of those procedures." ■

### STOBER as a project partner

Thanks to more than twelve years of development experience with melt filters, Ettliger's engi-

For additional brief information about Ettliger Kunststoffmaschinen GmbH see page 4



Günter Großmann (r.) consulting with Thorsten Ettliger (l.)

# AS6 Automation Control Suite – Engineering Tool

## For complete drive technology solutions in multi-axis operation

The AS6 Automation Control Suite includes all functions of digital drive control and control functions for up to 100 axes. All motion sequences of the machine or system can be perfectly coordinated with each other and the individual functions can be selectively optimized. This prevents insufficiently optimized drives loading down the entire mechanical system with fluctuations in current and torque.

The AS6 Automation Control Suite is based on the CODESYS software suite, which is hardware-independent and accepted worldwide, thus making it inherently open for "external" applications and components.

### One software solution for all servo axes

All the drives of a machine can be reached with the AS6 Automation Control Suite so they can be parameterized and optimized centrally. Access to the program elements of the Motion Controller is also possible without having to change the tool.

All important elements for commissioning and operating an automation system are integrated into the AS6 Automation Control Suite. In this way, motion curves and drives can be quickly and easily parameterized and programmed with the existing tools.

Convenient wizards provide support for users to enable, move and reference the axes. Axis optimization of the drives and programming of the controller (HMI, PLC, CNC and Motion) are possible in the AS6 Automation Control Suite via a connection point to the machine. The integrated drive function provides excellent support for optimizing the machine to the specified output level, as the workflow is not interrupted by constantly changing tools.

User-friendly blocks for visualization and for fieldbus and I/O configuration round off the system.



### Fast commissioning

After the electrical and mechanical setup is complete, the programmers previously had to first install the basic functions before they could test the basic functions of the axes. The electrical and mechanical specialists who had set up the machine therefore had to be on hand in case changes needed to be made. That is inconvenient and ties up capacities.

With the new fast commissioning tool, the basic initial tests can now also be performed without program code. Among other things, this tool can be used to check the

wiring for errors and the mechanical components can be subjected to an initial test. At the same time, it makes a complete drive status available – with data for power consumption and with torques. This makes it possible to move and reference the axes in jog mode to define the zero point.

The fast commissioning tool also features diverse functions and data to make servicing significantly easier. ■



High-speed filling movements are precisely coordinated with each other using the AS6 Automation Control Suite



STOBBER's own product line includes software and hardware for electronic components as well as servo geared motors based on 18 different types of gear units

# Kaltenbach is one of the big names in machine tool manufacturing

In 1887 Julius Kaltenbach opened a small metalworking shop in Lörrach-Haagen in the Markgräfler region where Germany, France and Switzerland meet. From this starting point, he and his successors developed a machine-building company with an international reputation. The name Kaltenbach has long stood for top-quality circular saws, and, additionally since 1980, also for CNC-controlled circular saws used to machine metals. But since the 1990s the company has successively evolved into a full-service supplier and partner for machine, plant and steel construction companies as well as for steel traders.

Today the portfolio of the Kaltenbach Group includes sawing and drilling systems, profile and metal plate machining centers as well as blasting and preservation systems. The following technologies are used: drilling, oxyfuel and plasma cutting, painting, marking, welding, punching, shearing, abrasive blasting and sawing with a band saw blade or saw blade. This covers practically all automation processes typical for the industry.

To comprehensively support Kaltenbach customers around the world, the Group has nine sales and service subsidiaries as well as representatives in about 50 countries. After all, there are more than 120,000 machines from Kaltenbach in service worldwide.



## Metal plate machining center KF 2606/12

**This newly-designed machining center focuses on the needs of steel construction, the steel trade and the requirements of equipment and machine manufacturers.**

This specialized machining center can be used for the fully-automatic processing of metal plates up to 2 600 mm in width, 12 000 mm in length and up to a thickness of 100 mm. Metal plates, strips and flat steel can be machined efficiently with the new metal plate machining center.



Metal plates used for machine manufacturing can typically be drilled and cut to size in a single clamping operation. The first step in this process is always machining, followed in the second step by thermal cutting. Up to 2 drilling and 4 cutting units can be fitted to offer significant opportunities for streamlining in metal plate machining.

Each axis is equipped with an automatic tool changer with 6 tools. A KF 2606/12 fitted in this manner is able to sign, mark, drill, punch,

countersink, mill and tap metal plates all in one procedure.

After machining is complete the system moves the workpieces to an automatic sorting unit.

For operation, Kaltenbach uses modern software specially tailored to the machines and systems. Programming can be done either directly on the machine via touch-screen or externally from the production planning office. ■

## A proven partnership

Collaborative work between Kaltenbach and STOBBER began in 2000. In addition to the aspects of quality and reliability of the geared motor technology, it was especially the compatibility with the controllers used by Kaltenbach that made STOBBER interesting for Kaltenbach's developers. STOBBER was able to connect different controllers perfectly, which opened up a wide range of possibilities for the use of STOBBER products.

Kaltenbach uses STOBBER drive systems in many of its plants and machines. In the new KF 2606/12 series metal plate machining cen-

ters, during drilling operations the planetary servo geared motors ensure optimum torques for positioning the drilling spindles. Compact drives with a torque of 32 Nm move the tool changers into the exact position with their heavy tools, which weigh up to 12 kilograms. STOBBER servo motors with planetary and helical bevel gear units and a torque of 2 600 Nm also ensure accurate positioning of the measuring trolley.

With STOBBER, Kaltenbach developers appreciate being able to plan their projects using drive units which are optimally fine-tuned to each other.

*"Our customers have strict requirements for quality and machine availability as well as positioning and repeat accuracy in all positioning axes. We pass these requirements on to our suppliers," explains Kaltenbach's Director of Development. "When we have an application and work together with STOBBER on it, the drive always fits – every time." ■*

# Frost & Sullivan Award for minimizing operating costs

Frost & Sullivan presents The Customer Value Leadership Award to STOBER for introducing its modular PE gear units and POWER2SPEED two-speed gearbox PS. The low maintenance overhead of ServoFit® and PS products from STOBER minimizes operating costs.

MOUNTAIN VIEW, Calif.  
Thursday, June 19, 2014.

Based on its latest analysis of the gear unit market for automation and machine tools, Frost & Sullivan, a consulting company with worldwide operations, has presented the 2014 Frost & Sullivan Award for Customer Value Leadership to STOBER. "Frost & Sullivan gives this award annually to a company that has demonstrably concentrated on service which goes far beyond just good and standard to enhance customer benefits and increase customer loyalty," says research analyst Krishna Raman of Frost & Sullivan.

The ServoFit® PE servo gear unit from STOBER offers users outstanding efficiency, with single-stage gear units achieving an efficiency level of more than 97%, and two-stage units an efficiency level of more than 95%.

One essential feature that sets this product apart is the helical toothing used in STOBER's ServoFit®

planetary gear units. This results in an extremely low operating noise level of less than 65dB(A).

ServoFit® gear units also feature an impressive minimum seal contact at the input and output drive, which further lowers energy consumption.

Due to their modular design, motor adapters of the ServoFit® gear

unit series can be mounted on practically any servo motor, which drastically reduces the installation time.

Another innovative product category from STOBER is two-speed gearboxes, intended primarily for use in machine tools. The PS gear units, designed for the main spindle drive, can be operated at two gear ratios. Gear ratio 1, the direct gear, is engaged when the machine tool is being used for applications with high cutting speeds, for example finishing. On the other hand, with the planetary gear unit engaged, gear ratio 2 permits rough machining with high chip removal capacity, which requires high torques.

"The PS gear units from STOBER are absolutely unique, as the planetary set is completely uncoupled at high speeds with low torques. This results in higher efficiency. Splashing losses are reduced and less heat is produced," Krishna Raman explains.

"This is superb recognition of STOBER's technical competence and a distinction for the entire company, which impressively underscores our technological market leadership," notes Patrick Stöber, CEO of STOBER.

Frost & Sullivan presents Best Practices Awards to companies that have distinguished themselves in numerous regional and worldwide markets through outstanding performance in the areas of leadership, technological innovation, customer service and product development. ■



## ... more about

### Ettlinger Kunststoffmaschinen GmbH

As a specialist for injection molding machines and melt filters, the family-owned-and-operated company from Königsbrunn, Germany has established a reputation over the last 30 years, especially for their special solutions for difficult-to-process plastics. The program of low pressure injection molding machines extends from shot volumes of 2.5 to 160 liters.

Ettlinger develops and implements custom-made concepts for the entire injection molding process in close collaboration with its customers. This begins with tool design, includes fully-automated

removal by robot as well as further processing and extends to the transport of finished components off site.

For over ten years, Ettlinger has also been involved with filtering plastics through continuously working melt filters. During this time it has amassed extensive expertise in this area as well, enabling the systematic further development of these innovative tools.

Melt filter units from Ettlinger can also be used with extruders from other manufacturers if necessary.

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