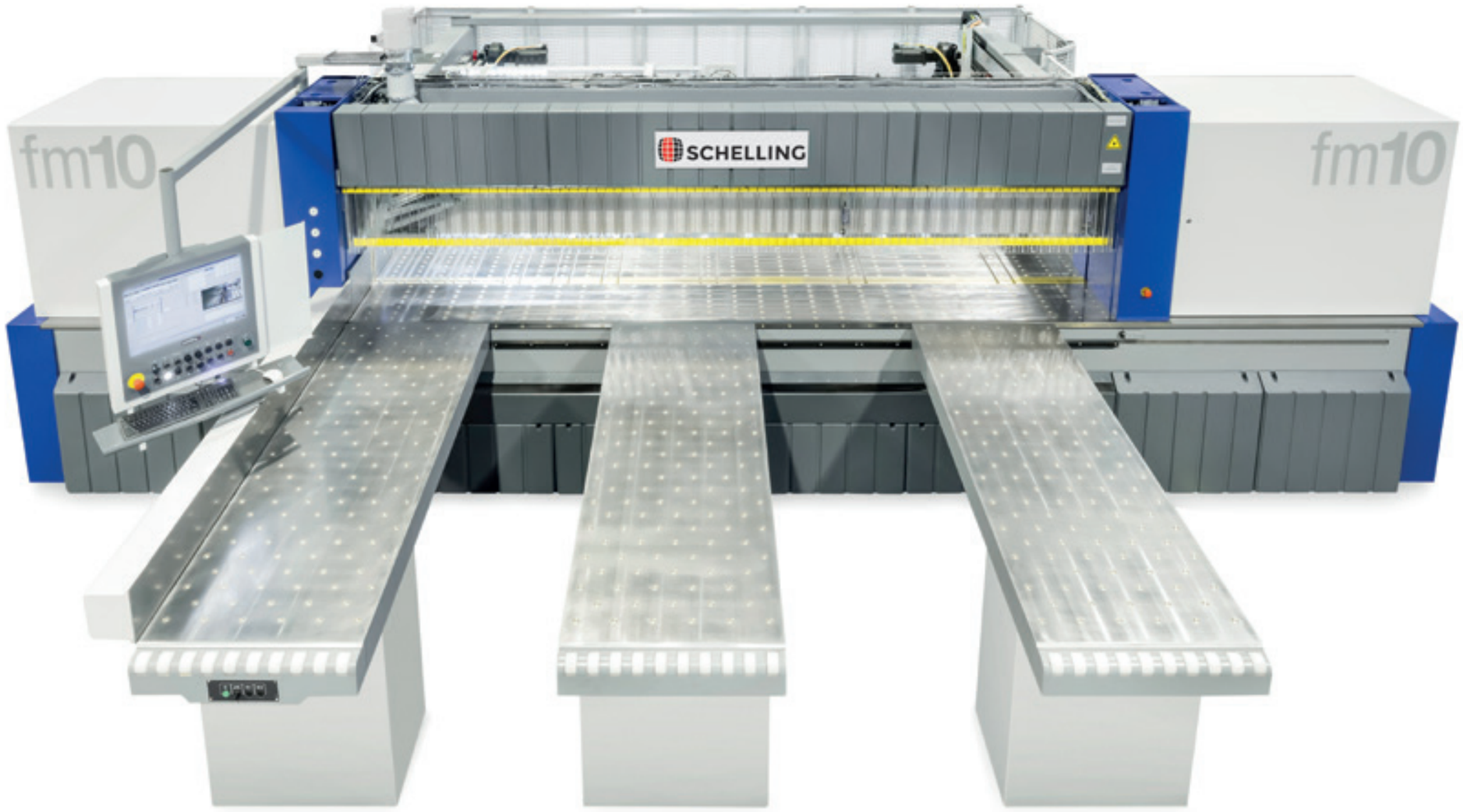
SCHELLING

High precision cut-to-size saws fm 10 and fm 12

The Flagship of Aluminum and Non-Ferrous Metal Saws.

schelling.com

LONG TERM STABILITY AND PRECISION WITH LESS IDLE TIME

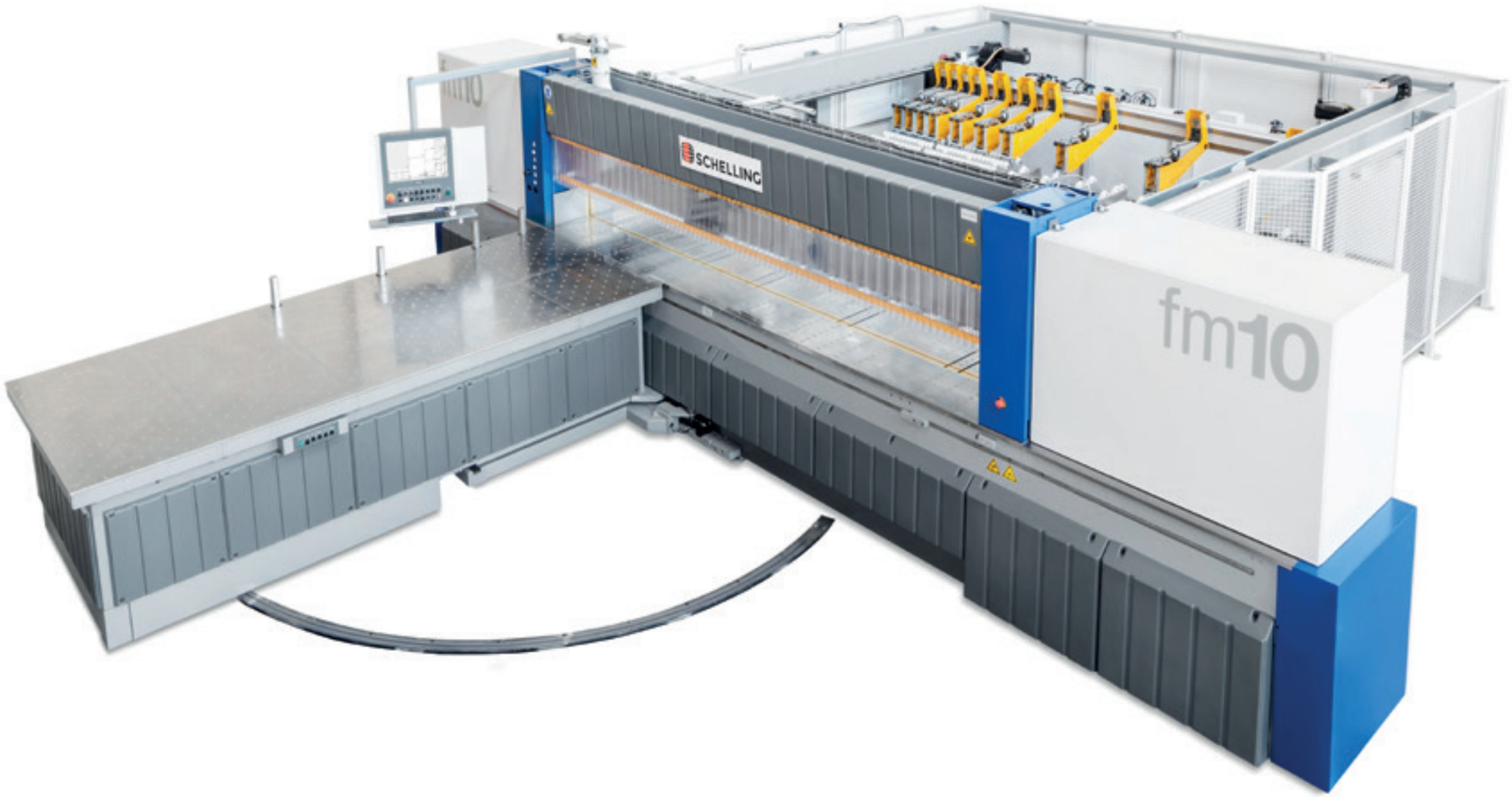


Cutting aluminum and other non-ferrous metal plates with high quality is a challenge. The characteristics and high value of these materials often requires well considered solutions in order to optimize cutting quality, to protect surfaces and to prevent scrap. The Schelling fm 10 and fm 12 offer what is the most advanced technology on the market for this purpose. They feature years of know-how provided by the market leader in cut-to-size saws: Schelling.

Robust construction prevents vibrations and torsions, which is an important prerequisite for high precision. The unique drive concept features a free-standing, water-cooled motor, which enables a constant maximum power transmission of 68 kW (!), and temporary overloads are not a problem. Optimization of all machine processes reduces unproductive idle time and increases the overall speed with sawing times solidly based on precision.

Precision and cleanliness are achieved by the chip guiding and chip extraction system as well as the further developed CLEAN-UP CUT system, which allows chip removal even during scrape cuts. The pressure beam is now divided and removes chips at the front and rear edges. With these features the machine now can provide extraction of up to 99.5 % of chips produced while cutting.

INCREASED PRODUCTIVITY: THE TURNTABLE



The patented turntable with 90° rotation makes saw operation even simpler and cutting more productive. Thirty years ago, Schelling invented the turntable and has continued to develop it ever since. Today, the entire machine is adapted to the turntable. It is mobile and semi-automatic. Quickly, plates and strips are first cut lengthwise, then crosswise.

The turntable offers many advantages:
1.) Material surface protection as the work pieces no longer need to be moved relative to the table; the material moves together with the table and is not scratched.

2.) Ergonomics and productivity; because there is no handling of individual parts involved, operation is more time-saving and less work-intensive.

3.) Advantages for very thick plates with low surface area since these are supported better by continuous air flotation under the material than by the machine version with fixed tables which has gaps between tables. Furthermore, the new, robust building block system of the fm 10 and fm 12 prevents the table from bending under the heaviest loads.

Because the turntable is designed as an air floating table, the surface of aluminum and non-ferrous metal plates can be handled without resistance and with little effort, and they remain completely protected.

New: Air flotation edge can be switched off
A new and unique feature makes handling plates on the fm 10 and fm 12 even more comfortable. The edge zone of the air flotation turntable may be shut on and off. When parts float to the edge the possibility they could fall is greatly reduced.
The fm 10 and fm 12 including turntable are the first stage of automation. Upon request, Schelling system specialist can provide even more material handling options all the way up to completely automated solutions.

A CLEAN SOLUTION: 99.5% CHIP REMOVAL.

The chip guiding and extraction system is one of the most important features for clean and precise cutting that produces high cutting quality, increased material yield, and increased machine up time. These systems are designed to ensure almost one hundred percent of chips produced through the cutting process are removed from the machine.

The system is designed to make intelligent use of the kinetic energy of the chips to remove them in a targeted manner. One specific feature is the chip protective curtain which provides a suction channel along the entire length of the pressure beam. The curtain is designed to exactly fit to the contour of the material to provide the highest performance possible.

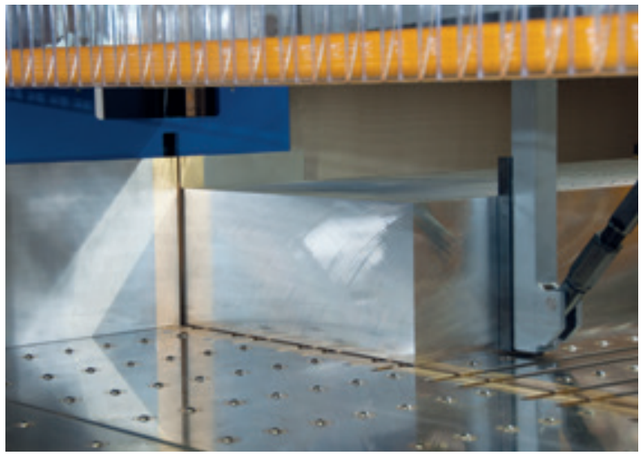
Schelling has also designed a machine that provides a fully closed suction channel when making scrape cuts at the front of a plate, during cutting in the middle of a plate and even when making a scrape cut at the back of a plate. This is the most demanding situation. The central element is the pressure beam, which is designed without slots or “cut outs”, the halves of which may be raised or lowered before and after the saw line via separate controls. This technical solution provides a completely sealed cutting line in all situations.

Say goodbye to chips during clean-up cutting

Removing chips when making scrape cuts or cuts less than a saw blade width has never been easy. But the patented Schelling CLEAN-UP system has mastered this challenging task. The latest development of the system now enables suction at the front and rear edge of the material.

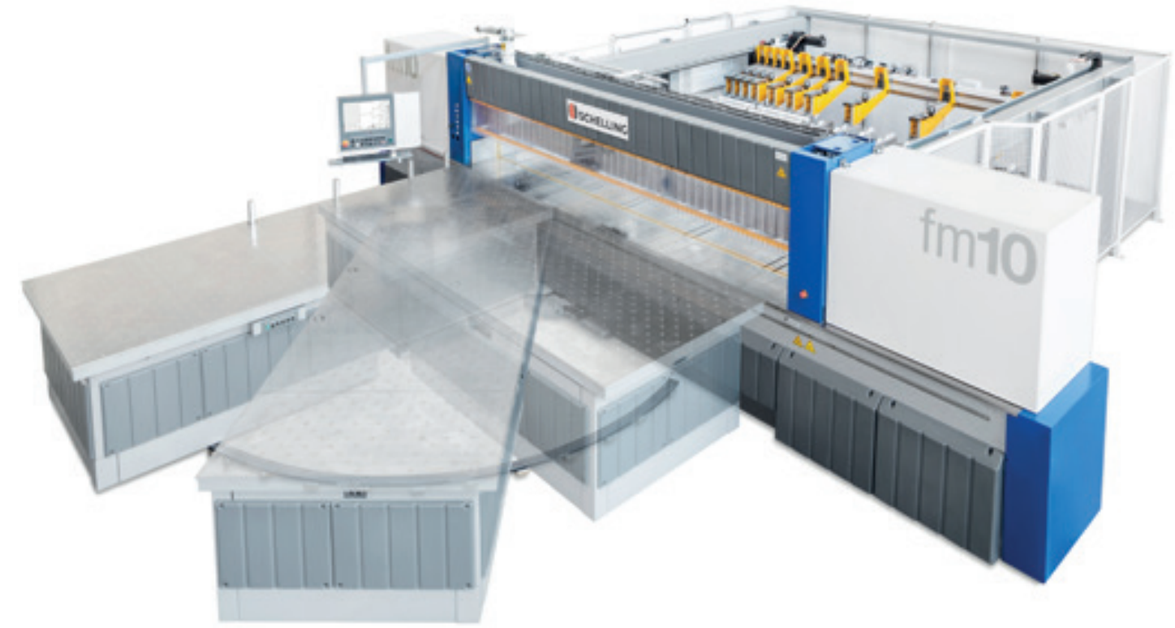
Closed chip guiding system

A closed chip guiding system guides chips away with the aid of their own kinetic energy. The divided pressure beam and chip guards enable a constantly sealed channel that allows 99.5 % disposal of chips and dust.



The turntable: Fast, material protection, precision work

The patented Schelling turntable (optional) provides extremely easy handling of full plates and even small parts. It ensures all long rip cut strips are effortlessly rotated in a single procedure for cross cutting. This significantly reduces the amount of material handling time by 15 – 20 %, increases productivity and protects material surfaces. The generous size of the table allows manipulation of the material directly at the operating station. This means that material waiting to be cut can stay on the table and is easily moved out of the way. Finished parts may be unloaded piece-by-piece with ease.



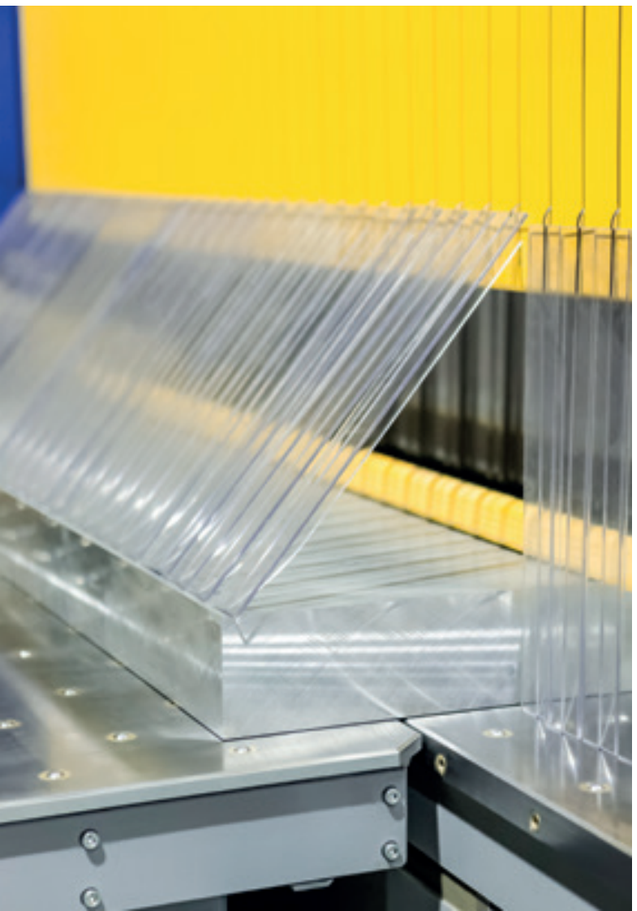
Turntable lateral positioning

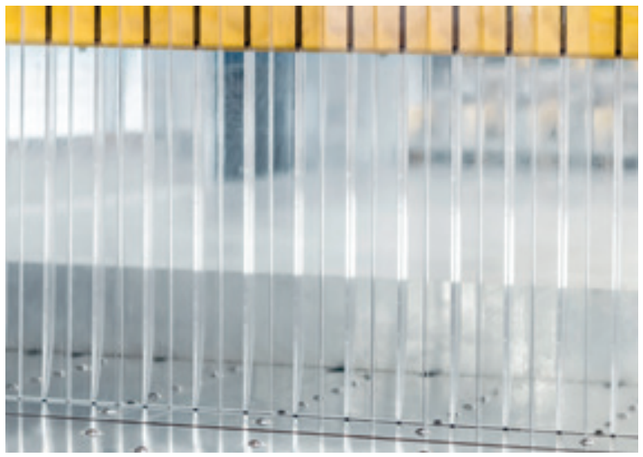
The turntable is movable in order to cut small parts to size with ease. Lateral mobility of the table allows perfect access to the cross aligning fence as show in the picture.

OPTIONS INCREASE SPEED AND SAFETY.

Remove material with ease: The scissors clamps position to the table.
Material is pushed by the scissor clamps past the saw line onto the air floating tables (or turntable). Reaching over the saw line to remove material is not necessary. Not only does this mean greater convenience, it also means greater safety.

The safety curtain protects you.
The safety curtain can be pivoted, raised and lowered. The combined pivot-raise-lower function allows work to continue without any disruptive lifting of the lamellas, thus speeding up cutting. In cutting sequences with a short stroke, the pressure beam only opens for moments, but the safety curtain remains lowered.





Steel machine table to protect surfaces.
Protecting the surfaces of machined aluminum and non-ferrous plates is extremely important. There are two measures for this: First, a hard-steel precision table, and second, the integrated air cushion in the entire machine table.

Air flotation table with central blower.
The air flotation tables make panels and parts extremely easy to handle. The new concept featuring a central blower enables the air flotation tables of the Schelling fm 10 and fm 12 to be activated in different configurations for maximum flexibility.
1.) Air can be turned on for all surfaces (air floatation tables / turntable and machine table)
2.) Air can be set to only turn on automatically when the feeder is moving not while cutting
3.) When equipped with air tables, the fixed air table can be on while the moveable air tables are off (buffer)
4.) With the turntable in lateral position, only the operator area air is active and the rest of the table is off.
This produces a L-shaped area (buffer) around the operator where the air is turned off.

The new option of switching off the edge zone on the air flotation tables also helps to improve prevention of falling parts.

SOLID CONSTRUCTION FOR LASTING PRECISION.

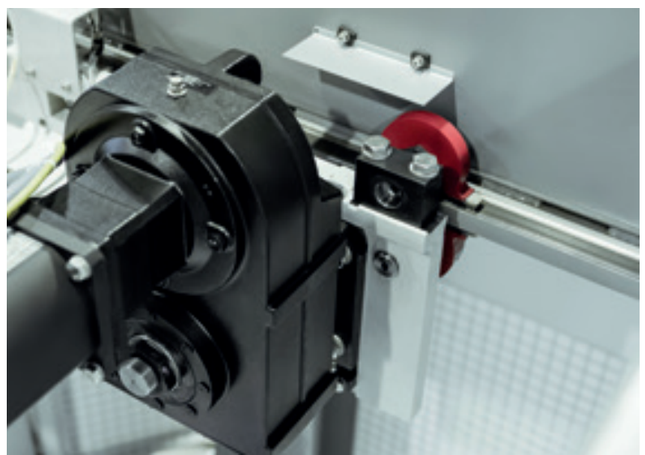
The heavy-duty construction of the Schelling fm 10 and fm 12, up to 30 tons, prevents vibrations and torsion from the great forces involved when positioning and cutting nonferrous metals. This ensures maximum angular accuracy and also stands for a long, highly profitable service life of the machine.

Feeder carriage with robust drive.
The feeder carriage ensures constant precision for positioning aluminum and non-ferrous plates. A major part of this is the robust drive unit. The feeder carriage is also equipped with an integrated brake. Once the feeder carriage has reached position, the brake locks it in place and holds while the saw is cutting. High dimensional precision is guaranteed.

Pressure beam seperated in two sections and patented pressure beam closing device
The two sections pressure beam with pressure beam closing device ensures that narrow strips and face cuts can be produced in the back – not just at the front end. The combination of pressure beam in two sections, dust protection and clean-up system guarantees the usual outstanding suction result with 99.5% of chips removed from the work area.

Strip aligning devices before and after the cut.
The double strip aligning devices before and after the cut line are another feature that makes the Schelling fm 10 and fm 12 the technological leaders in their class.
They feature torque controls and ensure precise contact pressure when sawing shapes of any dimension. Power transmission via motor-driven pinion racks is ideal for high panel weight. The high aligning force on the cross aligning fence also enables heavy plates to be processed very precisely. Additional optional aligners in the roller table area ensure that even long strips are reliably pressed onto the aligning fence. This ensures maximum angular precision.

Water-cooled 68 kW motor.
The newly developed 68 kW main saw motor on the fm 10 and fm 12 features water cooling, which makes it able to be constantly utilized up to 100 %. It can also handle temporary overloads. Water cooling also made it possible to design the motor and the machine table with less overall height, enabling the complete saw to be designed even more ergonomically. Therefore, the fm 12 does not need its own foundation with a pit in spite of its ability to cut material thickness up to 250 mm.



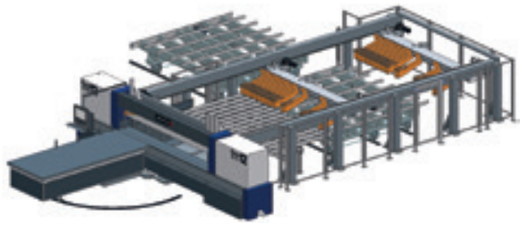
Exact to the last hundredth:
The gantry drive. The gantry drive is perfect for operators who want more than just high precision. This optionally selectable feature makes precision down to the last hundredth of a millimetre range a productive reality.

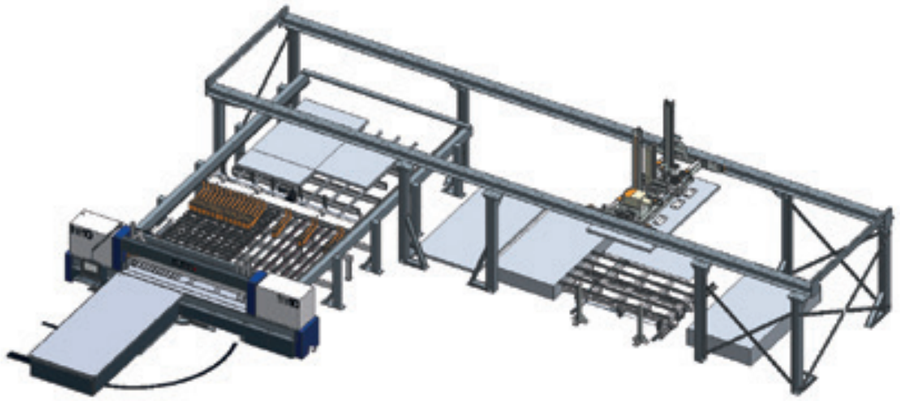
PERIPHERALS AND EXPANSION MODULES.

The core skills of Schelling Anlagenbau include not only the design of practice-oriented standard saws, but also – and perhaps to an even greater extent – the planning and implementation of customer-specific solutions.

Extra comfort: Jib crane and vacuum suction loading.
The pivot arm of a jib crane and vacuum suction unit are expansion stages featured on the Schelling fm 10 and fm 12 that accelerate and automate handling. These features allow the machine to be loaded quickly and professionally in industrial environments.

Gain time with the preparation table.
If the fm 10 and fm 12 are equipped with an optional preparation table, then additional time can be saved.
The preparation table allows the next plate or book to be loaded while plates are being cut to size on the machine. Idle periods are reduced because the next order can start the cutting process while the previous order is being unloaded.

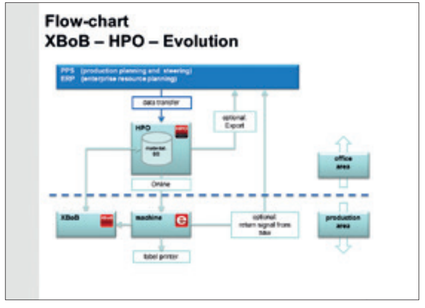


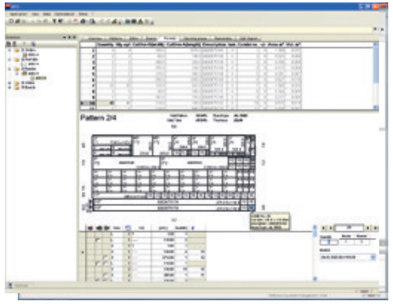


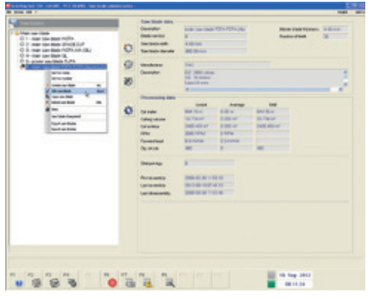
Flexible thanks to individualexpansion modules
Expansion with individual modules ensures even greater industrial performance. All conceivable, precisely adapted solutions for loading, material handling and stacking can be planned. Everything comes from a single source, from the technology leader in cut-to-size saws: Schelling.
From planning all the way to machine commissioning, Schelling controls the process. This means there is just one contact person who is responsible for ensuring that all components work seamlessly together from the very first moment.

INTELLIGENTLY CONTROLLED FOR HIGH OUTPUT

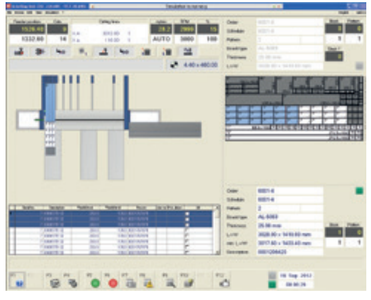
The Schelling MCS Evolution logic controller makes using the fm 10 and fm 12 efficient right from the start, and it also makes it possible to rapidly implement a high degree of automation. Open interfaces allow the machine to be easily integrated with existing systems and programmed from an office PC. A new diagnostic function for peripherals facilitates the work of machine operators and maintenance personnel and hotline remote maintenance, which is rewarding right from commissioning. The control desk with the MCS Evolution and the Schelling HPO optimization software turns work into a pleasure. Processes are displayed in real life mode – with unsurpassed fault diagnostics. Self-explanatory operator guidance practically excludes handling errors and increases saw availability and efficiency.





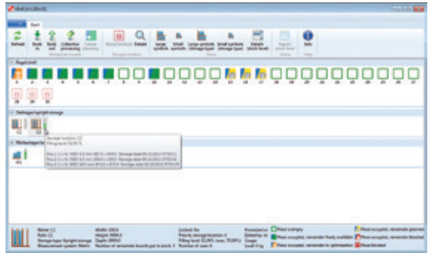


The operating data reporting of the MCS Evolution logs all relevant operating data, such as operating hours and the travel paths of the saw unit, feeder, pressure beam, etc. In addition, the running data of the saw blades are individually captured.



Display of the current cutting pattern, the cut, the order, and the material on the operator screen.

The newly developed optical power display aids easy sight monitoring of the saw motor power. (Only with the continuously adjustable RPM control option).

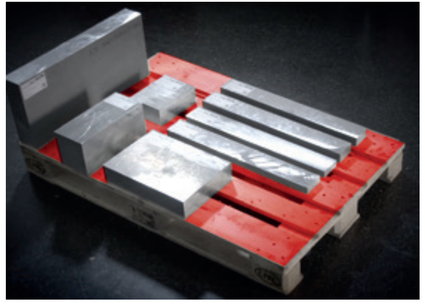


HPO cutting plan optimization saves time and money

The current release of optional HPO cutting pattern optimization presents new functions for productivity and operating comfort. The multi-core design ensures that information contained within modern computer hardware is recovered quickly. This means computing times are reduced by as much as 60 %. In addition, the system works with the latest computer core. Another new feature is the pattern appearance can be virtually set as desired, on request the optimal non-machined panel can be determined, the print function can be configured and searching has been even more clearly designed.

XBoB brings order to waste

With the XBoB remainder management program, board remainders can be managed in a manual store. Remainders are automatically booked in and out in interaction with the machine control unit. In addition, XBoB is the interface from the machine control unit to the optimization program. Remainders that accumulate can be re-planned and used without delay in the optimization. An easy and safe system for maximum utilisation of material.



SCHELLING

TECHNICAL DATA

Saw blade	fm 10	fm 12
Diameter	680 mm / 26.75''	780 mm / 30.75''
Projection	215 mm / 8.45''	265 mm / 10.45''
Clamp opening	230 mm / 9.00''	275 mm / 10.75''
Book height		depends on material and saw blade

Power	fm 10	fm 12
Saw Motor	55 kW / 74 HP	68 kW / 91 HP

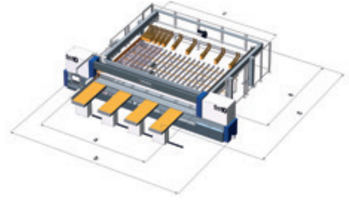
Feed rate	fm 10	fm 12
forward	0 – 25 m/min / 0 – 82 ft/min	0 – 25 m/min / 0 – 82 ft/min
reverse	0 – 30 m/min / 0 – 100 ft/min	0 – 30 m/min / 0 – 100 ft/min

Saw feed rate	fm 10	fm 12
forward	0,1 – 80 m/min / 0,3 – 262 ft/min	0,1 – 80 m/min / 0,3 – 262 ft/min
reverse	80 m/min / 262 ft/min	80 m/min / 262 ft/min

Dimensions fm 10 / fm 12 manual

	330	430	630
a	3330 / 131.00''	4330 / 170.50''	6330 / 249.25''
b	7200/ 283.50''	8200 / 323.00''	10200 / 401.50''
c	5560 / 291.00''	6560 / 258.50''	8560 / 337.00''
d	8050 / 317.00''	9050 / 356.50''	11050 / 435.00''
e	5470 / 215.50''	6470 / 254.75''	8470 / 333.50''

Dimensions – mm / inch



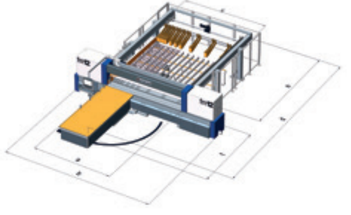
Weight

330 13.500 kg / 29,780 lbs
430 15.000 kg / 33,070 lbs
630 20.000 kg / 40,100 lbs

Dimensions fm 10 / fm 12 automatic

	330	430	630
a	3330 / 131.00''	4330 / 170.50''	6330 / 249.25''
b	7200 / 283.50''	8200 / 323.00''	10200 / 401.50''
c	5560 / 291.00''	6560 / 258.50''	8560 / 337.00''
dDT	9140 / 360.00''	11140 / 438.75''	15140 / 596.25''
e	5470 / 215.50''	6470 / 354.75''	8470 / 333.50''
f	3200 / 126.00''	4200 / 165.50''	6200 / 244.00''

Dimensions – mm / inch
DT – turntable / LKT – air floatation table



Weight

330 16.000 kg / 35,300 lbs
430 18.000 kg / 39,700 lbs
630 25.000 kg / 55,100 lbs

SCHELLING – ONE GOAL: EXPERTISE IN DEVELOPING SOLUTIONS FOR THE METAL WORKING INDUSTRY

Schelling is a reliable partner for implementing of sophisticated system solutions.
The demands of our customers are a daily challenge to us, our know-how and creativity!
We work with you to develop innovative and unique solutions for metal processing.

www.schelling.com

SCHELLING

ENG 09/2018 | 250 Stück | v1