STEIN BLUE-LINE for a sustainable future

STEIN Mechanical engineering

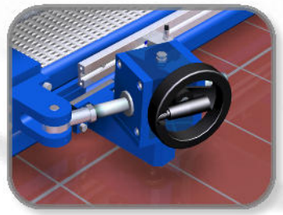
QTK traverse-cutting combination

Equipment / options / additional equipment:

The following is a selection of different options/information/additional equipment for traverse cutting machine combinations:

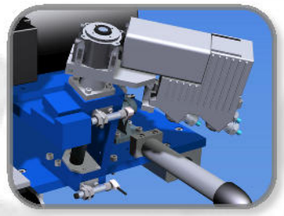
Angle adjustment

The lower structure of the machine consists of a lower frame and an upper frame. The upper frame may be rotated via a spindle unit on the lower frame. This enables the right angle of the cutting edge to the lateral edge of the cut plate to be corrected as required.
The adjustment is made manually using the hand wheel for the standard version.
Optionally, the adjustment may also be made via an actuating drive.
Note: An angle adjustment for a traverse cutting combination is only possible after a working height of 1250 mm.



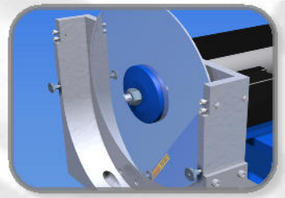
Saw blade extension height setting

The standard setting for the saw blade extension height is adjusted manually or via an adjustable end stop for the pivoting motor base featuring the actual saw motor.
Optionally, the adjustment may also be made via an actuating drive. The extension height may be changed comfortably on the control panel without influencing the production process.
The actual movement for lifting and lowering the pivoting motor base is adjusted pneumatically for both versions.



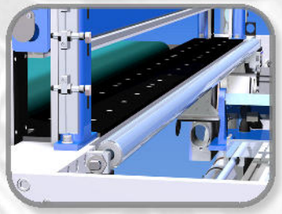
Quick-change system for saw blade

In the standard version, the flanges for clamping the saw blade are fastened via a regular hexagonal nut on the motor shaft. **Optionally**, a special version of the saw motors with a quick-clamping system for the saw flanges may be used. With this variation, a saw blade may be changed quickly and with minimal force and tool involvement.



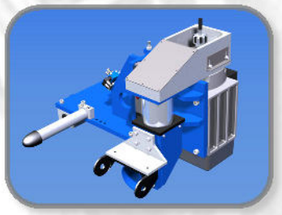
Lifting roller for sensitive plate materials

The supporting surfaces of the machine feature polished stainless steel plates and plastics featuring outstanding gliding properties. In order to prevent contact between the supporting surfaces and the extrusion material, the extrudant may be raised via a pneumatically actuated roller integrated on the in-feed side. In particular, this can be helpful if a protective film is used on the underside of the extrudant. For the traverse cutting combination, a lift for the intermediate roller track may also be implemented.



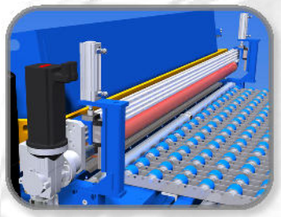
Traverse-cutting mill in place of traverse-cutting saw

The traverse-cutting unit is also available as a traverse-cutting mill. In this case the cut is completed by a special milling motor and an end mill instead of using a saw blade. This enables improved surface quality to be achieved and materials that may be problematic for regular saw blades (e.g.: fibreglass-enhanced plastic) to be cut with increased tool life.
The mechanical layout of the traverse-cutting mill is similar to the traverse-cutting saw.



Auxiliary pull-off unit (optional)

During the production of very thin, non-rigid panels, the plate extrudant may be curved upwards, especially if the pull-off machine of the extrusion system is standing very far away from the traverse-cutting device. For the plate extrudant to be pulled into the machine safely, a motorised pull-off roller featuring a counter-pressure roller that moves analogously with the longitudinal slide may be built onto the in-feed side. This auxiliary pull-off may also **optionally** be combined with the function of the lifting roller.



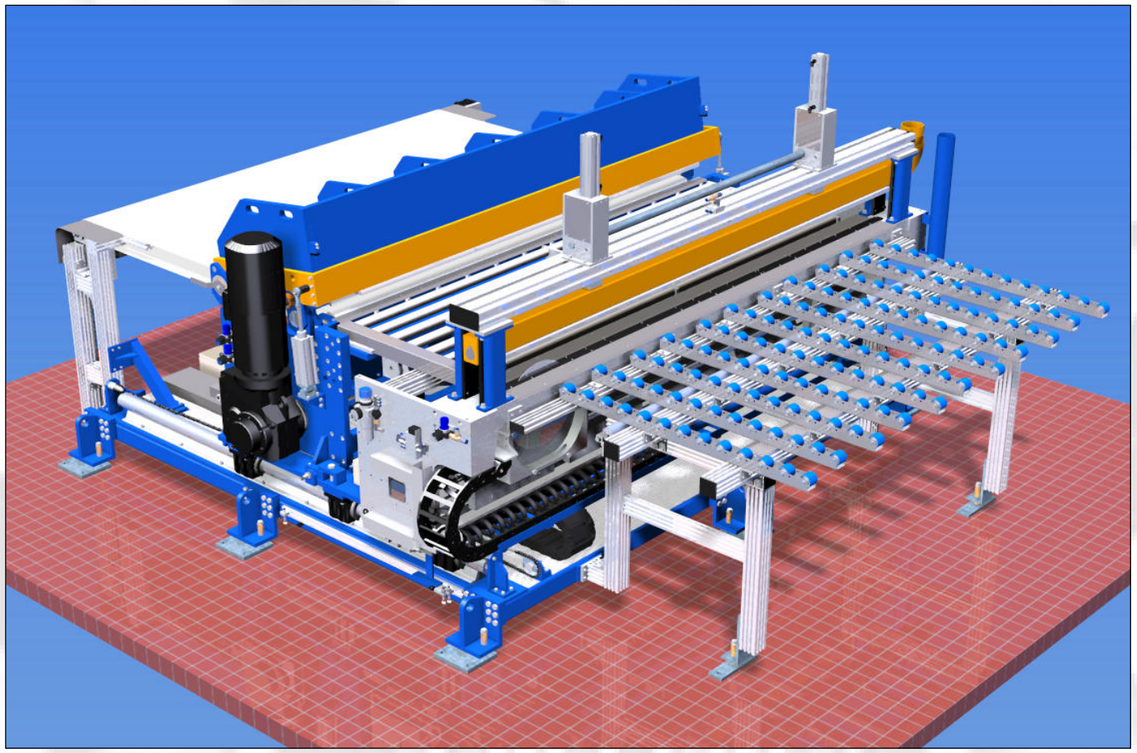
Made in Germany

STEIN Maschinenbau Wartbachstrasse 9 66999 Hinterweidenthal, Germany
Telephone: (+49) (0)6396-9215-0 Fax: (+49) (0)6396-9215-25 E-mail: info@stein-maschinenbau.de

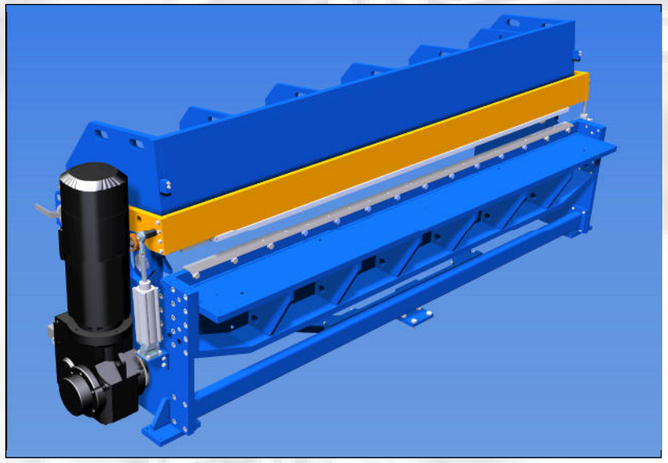
STEIN BLUE-LINE for a sustainable future

STEIN Mechanical engineering

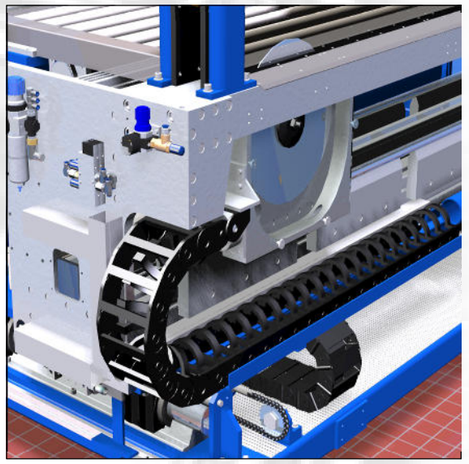
QTK traverse-cutting combination



QTK-2500 traverse-cutting combination



Impact shears type: SSS-25



Saw unit

Made in Germany

STEIN Maschinenbau Wartbachstrasse 9 66999 Hinterweidenthal, Germany
Telephone: (+49) (0)6396-9215-0 Fax: (+49) (0)6396-9215-25 E-mail: info@stein-maschinenbau.de

STEIN BLUE-LINE for a sustainable future

STEIN Mechanical engineering

QTK traverse-cutting combination

Advantages of the STEIN traverse-cutting combination

The STEIN traverse-cutting combination combines several properties of the STEIN traverse-cutting shears in one machine.

In principle, a traverse-cutting saw can process any material in any thickness. This only depends on the design of the machine and use of a suitable saw blade. A traverse-cutting saw also has two disadvantages, however, that cannot be overlooked: During cutting, chips result that are extracted from the cut and need to be disposed of/recycled. In this case, composite materials are only able to be cut with difficulty and high costs. The functioning principle of a traverse-cutting saw also results in limited cut lengths corresponding with the required traverse movement path and the cut feed in relation to the extrusion speed. Often, concessions in terms of quality are made in this case so that it is possible to make a cut at all.

There are limits with the traverse-cutting saw in terms of cut thickness and cut quality for larger cut thickness. However, the advantages of chip-free cutting and the very high cutting speed and resulting short cutting intervals are emphasised in this case.

With a traverse-cutting combination, both machine elements (saw and shears) are combined to compensate the disadvantages of the individual machines and make the benefits of both available.

For production of plastic plates featuring very different material thickness on an extrusion system, the use of a traverse-cutting combination may represent the necessary conclusion.

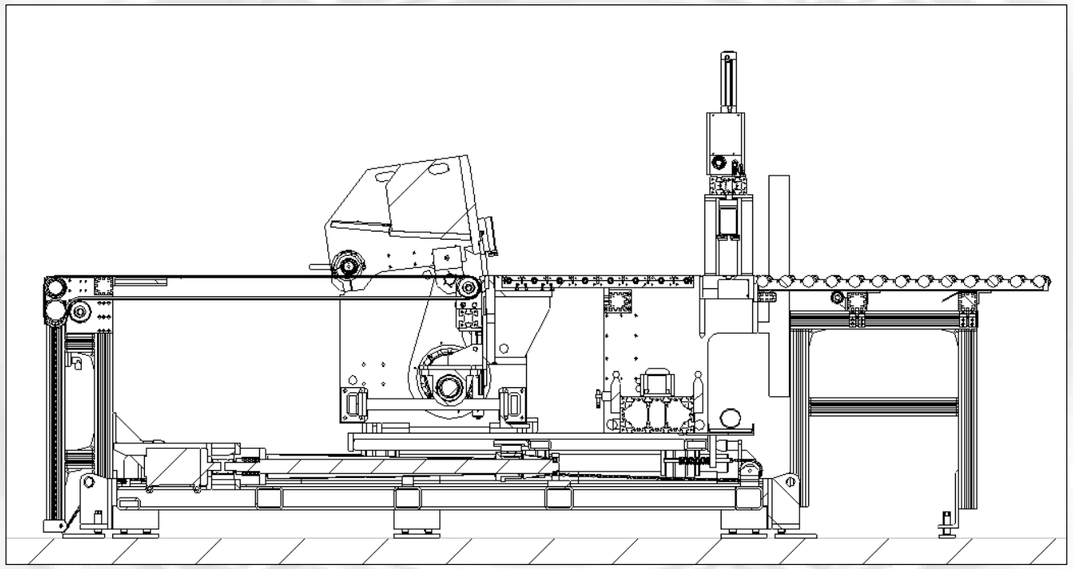
Basic structure

- Welded hollow steel profile lower frame.
- Saw unit perpendicular slide mainly consisting of aluminium to reduce the weight for high movement speeds.
- Contact surfaces with the product designed in stainless steel or plastic sliding materials.
- Stable supports for the extrusion material along the complete length of the machine.

Electrical technology (in general)

Control field functions:

- Insertion of production cut lengths and return material.
- Cut counter with differentiation between production cuts and return feed material cuts and differentiation between cuts by the shears and the saw unit.
- Settings for all machine-relevant and production-relevant parameters.
- Hand control functions for checking the machine functions after repair and maintenance work.



Made in Germany

STEIN Maschinenbau Wartbachstrasse 9 66999 Hinterweidenthal, Germany
Telephone: (+49) (0)6396-9215-0 Fax: (+49) (0)6396-9215-25 E-mail: info@stein-maschinenbau.de

STEIN BLUE-LINE for a sustainable future

STEIN Mechanical engineering

QTK traverse-cutting combination

Basic mechanical layout

- Shared longitudinal slide for both cutting units.
- Sychronous movement with the extrusion material via trapezoidal threaded spindle, servo motor, and special parallel running controls.
- The drive of the saw slide is aligned in the cutting direction above a dust-protected, closed ball screw and servo motor.
- Saw guard designed for high chip extraction below and extractor beam above the product track. Extractor hoses guided via corresponding energy chain.
- Top extractor beam simultaneously laid out as a clamping beam to fasten the product track.
- Motorised intermediate roller track for bridging over the gap between the saw and shearing unit.
- Removal of the cut plates via an extremely durable transport belt featuring automatic compensation of the analogous movement.
- Saw motor designed as a flat motor in various power levels.
- Plate shear design as swing-beam plate shears.
- Cut gap setting possible in 4 stages (0.02 to 0.3 mm).
- Upper and lower blades featuring same design. The knives can be rotated once and installed again before they need to be reground.
- Cut movement drive via asynchronous servo motor. In case of extremely high cutting forces, two synchronously operating motors are installed.
- Material clamping via clamping beams that move synchronously with the upper blade beams. The clamping force is regulated pneumatically.

Hydraulic impact shears

The actual plate shears may also be designed with a hydraulically operated cutting drive as required. In this case, note that space for a hydraulic unit must be planned beside the machine (or possibly below the subsequent machine). The remaining structure of the machine remains the same.

The slowness of a hydraulic systems can nevertheless impair the cutting speed. However, this may be compensated via use of two output positions for the shearing cut. If the shearing unit is not used, then this is opened for complete throughput, while if the unit is active, a working position just above the plate extrudate is set.

Traverse-cutting mill in place of saw

The traverse-cutting unit is also available as a traverse-cutting mill. In this case the cut is completed by a special milling motor and an end mill instead of using a saw blade. This enables improved surface quality to be achieved and materials that may be problematic for regular saw blades (e.g.: fibreglass-enhanced plastic) to be cut with increased tool life.
The mechanical layout of the traverse-cutting mill is similar to the traverse-cutting saw.

Technical data:

	QTK-1250	QTK-1600	QTK-2000	QTK-2500	QTK-3000
Cutting width	1300 mm	1600	2000	2500	3000
Throughput width (horiz/ vert)	1390/70	1690/70	2090/70	2590/70	3090/70
Max. saw blade extension height			58 mm		
Max. extrusion speed			12 m/min		
Max. saw blade diameter			420 mm		

Made in Germany

STEIN Maschinenbau Wartbachstrasse 9 66999 Hinterweidenthal, Germany
Telephone: (+49) (0)6396-9215-0 Fax: (+49) (0)6396-9215-25 E-mail: info@stein-maschinenbau.de