

OPTIMA

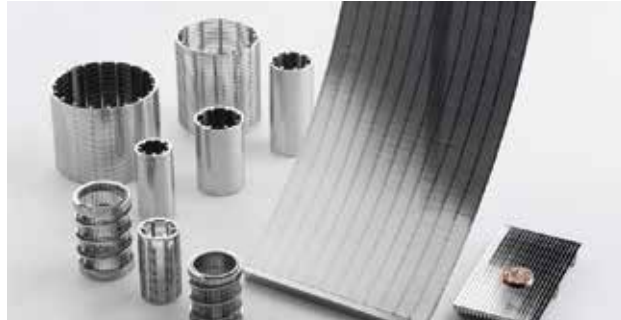
Welded Wedge-Wire Screens & Industrial Filter Media



The OPTIMA Products

- Wedge Wire Panels
- Plain Sieve Panels
- Sieve Bends
- Slotted Screen Baskets
- High Precision Filter Tubes
- Industrial Filter Media

 **STEINHAUS**



With welded wedge wire screens cold drawn triangular profiles are used as slot-forming wires. Excellent mechanical properties for demanding applications combined with high precision slots are key quality features. OPTIMA wedge wire screens are often used for solid-liquid separation in an almost unlimited range of applications, such as dewatering screens, filter candles, sieve baskets, filter drums or centrifuge screens. Typical applications for OPTIMA welded wedge wire screens include screening machines, sieve bends, centrifuges for dewatering, deslurrying and classification,

Wedge Wire Screens and Filters for Your Application



star-shaped distributor

as well as a wide range of processes in the chemical, pharmaceutical, food-processing and water-treatment industries.



OPTIMA Slotted Screen Baskets

The efficient separation of materials in various processes, particularly in solid-liquid separation is of high priority in many sectors of industries. OPTIMA welded wedge wire centrifuge baskets provide optimum separation performance because of their superior workmanship and high dimensional accuracy. Centrifuges as well as separators are used in the following industries:

- Chemical industry
- Food industry
- Wastewater treatment
- Sand & gravel industry
- Environmental applications (biogas)
- Mining industry



OPTIMA welded wedge wire baskets are designed for use in:

- Conical and cylindrical centrifuges
- Cylindrical screw press separators

Available with the following features:

- Reinforced or non-reinforced design
- One-piece or multi-piece construction
- All technically feasible sizes and configurations
- Various stainless steel and special alloy grades
- Axial or radial slot orientation



Three Screen Cylinder Variants for Every Application

STEINHAUS screen cylinders are available in ecoDrain, fastDrain, and greenDrain versions. They provide highly efficient separation of liquid and solid components in slurry and biomass processing applications. Engineered for optimum rotational performance, our screen cylinders ensure safe, fast, and reliable separation results.

ecodrain
EcoDrain is our high-quality standard screen cylinder.

greendrain
Looking for a cost-effective solution for producing animal bedding?
Need a puncture-resistant and stackable product?
Then our greenDrain line is the ideal choice, achieving the highest possible TS content.

fastdrain
For demanding applications with high total solids (TS) content, our fastDrain screen cylinder delivers optimum performance.

Design Follows Function

We manufacture screen cylinders for all common separator types in Germany to the highest industrial quality standards. Made from high-quality stainless steel, they offer outstanding robustness, durability, and reliable long-term performance.



Product Features

- OPTIMA screen cylinders for screw press separators
- Available in one-piece or multi-piece designs
- Manufactured in all technically feasible sizes and configurations

G-Rails, T-Rails, Press Screws

For our screen cylinders we offer:

- Newly manufactured press screws
- Refurbished press screws
- as well as:
- Polyamide G-Rails
- PTFE T-Rails



OPTIMA Spiral Wedge Wire Cylinders



OPTIMA spiral wedge wire cylinders are manufactured in diameters of up to 1,022 mm and lengths of up to 5,500 mm. OPTIMA precision filter tubes, produced on highly accurate automatic welding machines, are available in diameters ranging from 23 mm to 305 mm. All OPTIMA products are characterized by their robust construction and are designed for mechanically demanding applications. The high pressure resistance of our filter tubes can be further enhanced by means of support elements, such as internal square-wire spirals. Thanks to specially developed profile wires, slot widths as small as 6 microns can be achieved.



Radial Slot FOTI

- FOTI (Filtration from Outside to Inside)
Working Surface on the Outside

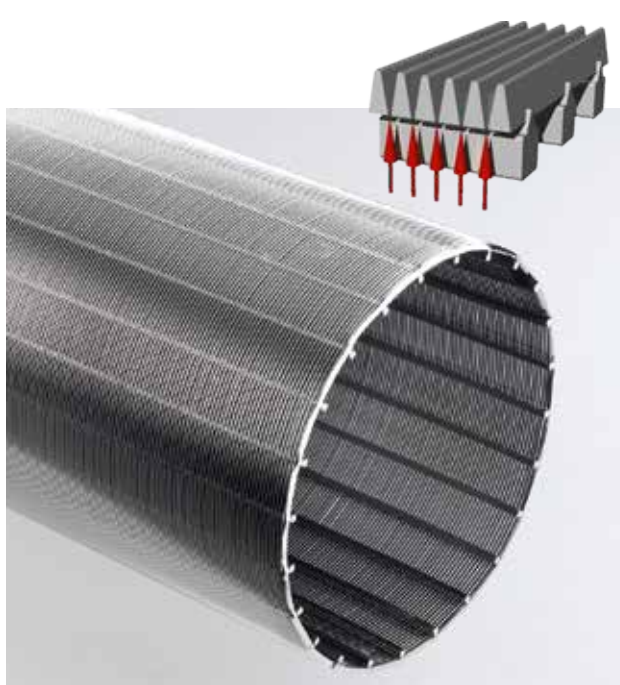
The triangular slot-forming profiles are welded with their wedge side to the inner support rods. This is the most commonly used design. The smooth outer working surface minimizes the accumulation of solids and enables easy cleaning.



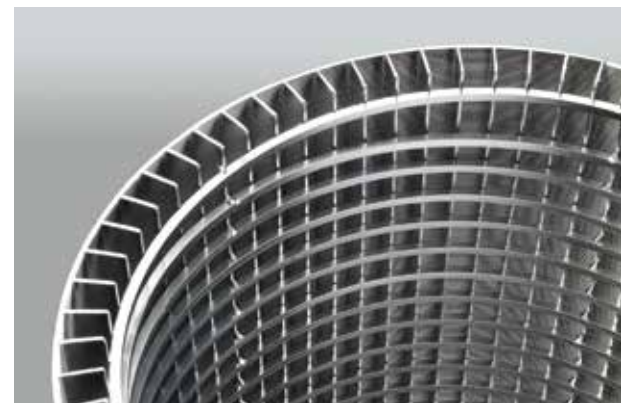
Radial Slot FITO

- FITO (filtration from Inside to Outside)
Working surface on the Inside

The triangular slot-forming profiles are welded with their flat top surface to the inner support rods. As a result, the flat filtration surface on the inside is interrupted by the support rods, making backflushing the preferred cleaning method.



OPTIMA High-Precision Filtration Tubes



Axial Slot FITO

In this axial design, the slot-forming profile wires run parallel to the axis of the wedge wire cylinder. The support rods are spirally wound and welded to the profile wires from the outside. As a result, the working surface on the inside is smooth and uninterrupted. This type of cylinder is manufactured either directly or by reverse rolling a flat screen panel. A special feature of this design is the smooth inner filtration surface, which allows the use of scrapers for effective cleaning.



Square Slot® FITO / FOTI

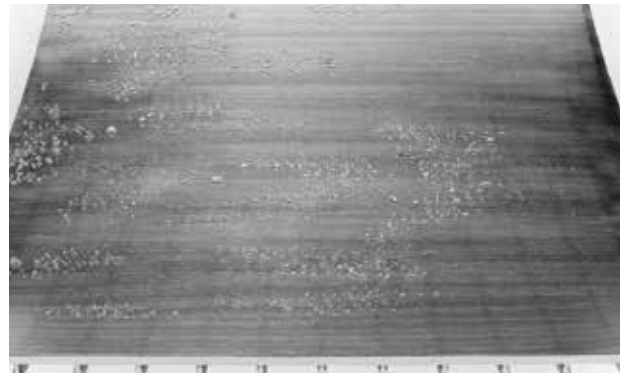
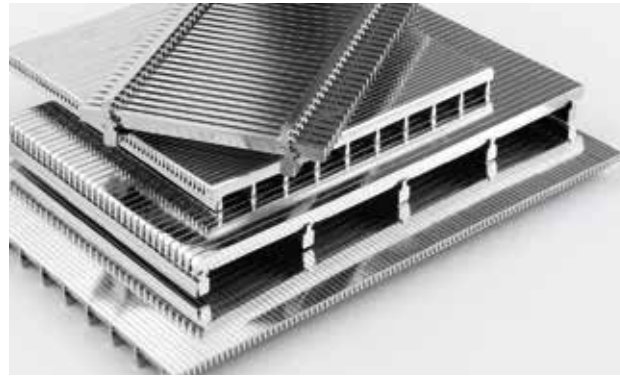
This latest OPTIMA innovation featuring square filter openings is based on a completely new filtration concept. The patented design can be used for filtration from the inside and/or outside, providing perfectly aligned axial and radial openings. These filter tubes demonstrate their operational advantages particularly when handling fibrous media. The special geometry enables square openings as small as 70 microns.



OPTIMA Wedge Wire Screen Panels

Plain or bended wedge wire panels find their use in the following sectors of industry:

- OPTIMA plain sieve panels with or without reinforcement in dewatering and screening machines
- OPTIMA filter bottoms for diffusion and extraction towers, plain filters, ion exchange systems, back flush filters etc. ...
- OPTIMA support panels for filter fleece in belt filters
- OPTIMA sieve bends with slots across flow direction for an optimal solid / liquid separation
- OPTIMA architectural grids for cladding of building facades
- OPTIMA kiln and lauterer floors in breweries and malthouses



The OPTIMA range of wedge wire screens starts with fine profile wires designed to achieve the highest possible open screening area and extends to robust, heavy-duty constructions capable of withstanding high mechanical loads during operation.

A wide variety of profile wire shapes is available for the screening surface, some of which are patented.



Production

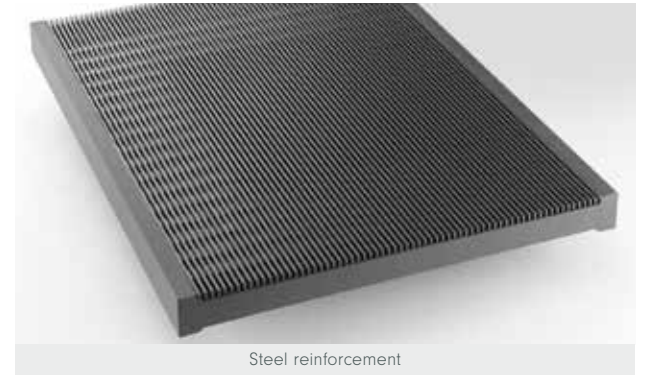
Plain OPTIMA screens are primarily manufactured using flat welding techniques. Depending on the design and required slot width, a spiral-welded wedge wire cylinder can also be produced first and subsequently cut open and flattened to form a flat screen.

OPTIMA Wedge Wire Screen Panels

Types of Reinforcement

Plain OPTIMA slotted screens can be reinforced according to application requirements to ensure proper installation.

- Steel reinforcement:
Reinforcements are available in various steel grades and designs according to customer specifications. Whether equipped with a frame for clamp fixing or with drilled side rails for bolted installation, virtually any configuration can be supplied. Smaller screen panels are often supplied as a single piece, ready for installation. Larger panels, however, are manufactured in several segments to facilitate handling and installation. These individual segments can be designed in trapezoidal, triangular or conical shapes and, if required, can be equipped with a manhole for maintenance access.



Steel reinforcement



OPTIMA System



LOSIPLAST

- OPTIMA system:
Manufactured as modular segments featuring a specially standardized side profile for easy snap-in installation using a polyurethane two-groove adapter slot.
- LOSIPLAST side rails:
Manufactured from high-quality cast polyurethane with integrated steel reinforcement for secure clamp fixing in screening machines.

Special Designs

STABO Grids

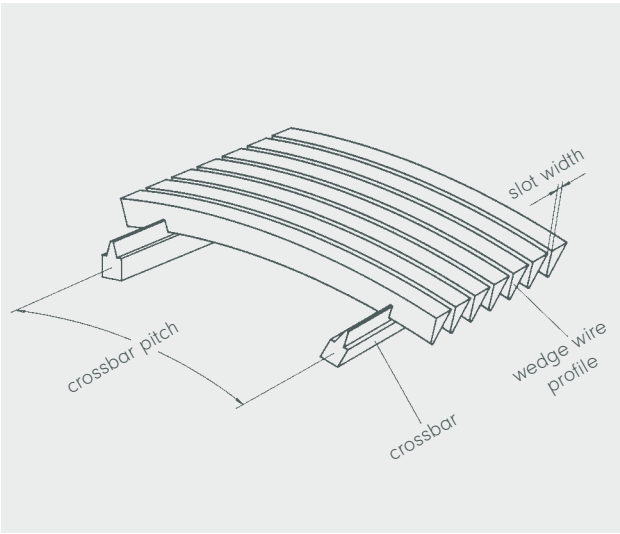
These heavy-duty grids are manufactured from specially shaped profiles with round-wire crossbars. Spacer rings ensure the required slot width. STABO grids are used for dewatering applications, as protective and cover grids, and as coarse or fine screens in wastewater treatment plants.



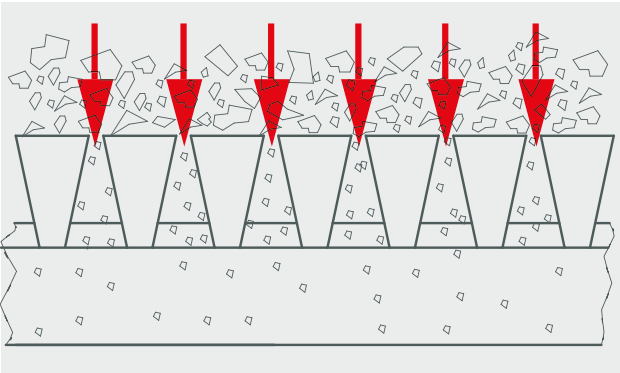
PRÄZISSA Looped Wedge Wire Screens

These screen segments are manufactured from looped and cold-formed profile wire welded to round support rods. PRÄZISSA looped wedge wire screens feature a double-conical slot design and are therefore particularly suitable for applications in the sugar industry.





The profile wires are connected to the support rods by means of high-pressure resistance welding. This construction ensures that the entire segment is dimensionally stable and highly resistant to mechanical stress. Individual production parameters are controlled by a computerised welding system. Continuous monitoring of key welding parameters, such as the welding current, ensures consistent quality and high mechanical stability. The triangular shape of the profile wires virtually eliminates the risk of slot clogging. The slot, which widens in the direction of flow, prevents blockage by particles with a size close to the slot opening.



Material Grades		
1.4016	1.4439	1.4864
1.4057	1.4449	1.4507
1.4301	1.4462	2.4360
1.4404	1.4529	... etc.
1.4435	1.4539	on request
1.4541	1.4828	
1.4571	1.4841	

Calculating the Open Screen Area of OPTIMA Screens

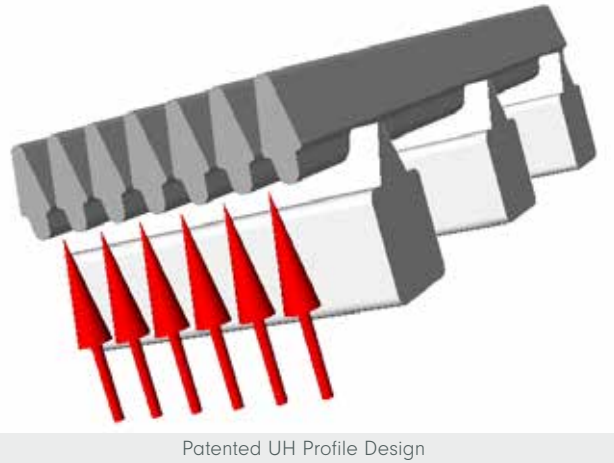
$$\text{Screen area} = \frac{\text{Slot width}}{\text{Profile head width} + \text{Slot width}} \times 100 \%$$

These are your requirements:

- Long service life
- Filtration / separation performance
- Cut size
- Slot width precision
- Stability

To meet these requirements, a wide range of individually developed profile shapes is available for your specific application. The profile shape determines the type and degree of slot widening and helps to keep the slot openings free from blockage.

Special profiles and special steel grades for specific applications are available upon request.



US - Standard for High-Precision Filter Tubes			
	Type	B [mm]	H [mm]
	4 US	0,495	1,25
	10 US	0,75	1,4
	11 US	0,75	1,8
	12 US	1,0	2,0
	15 US	1,19	2,24
	18 US	1,5	2,5
	22 US	1,8	3,7
	28 US	2,2	4,5
	34 US	2,8	5,5
	42 US	3,4	6,8

HS – heavy-duty profiles for flat screening panels

Type	B [mm]	H [mm]	H1 [mm]
Hs 6	5,0	7,0	1,6
Hs 8	6,8	9,4	2,2
Hs 10	8,5	11,5	2,7
Hs 12	10,0	14,0	3,3

UH - designed for high-precision filter tubes

Type	B [mm]	H [mm]	H1 [mm]
105 UH®	0,5	1,4	0,9
11 UH®	0,75	1,8	1,3
12 UH®	1,0	2,0	1,35

USC / SBB - profiles with higher wear resistance: SBB for all types of screens and for cylinders > 400 mm Ø. USC for cylinders < 400 mm Ø.

	Type	B [mm]	H [mm]	H1 [mm]
	18 USC	1,5	2,5	1,0
	34 sbb	2,2	5,0	3,0
	42 sbb	2,8	6,5	4,0
	50 sbb	3,4	7,5	5,0
	76 sbb	5,0	10,0	7,0

WO - for manufacturing spiral-welded cylinders			
	Type	B [mm]	H [mm]
	10 WO	1,0	2,0
	15 WO	1,5	2,5
	20 WO	2,0	3,0
	25 WO	2,5	3,5
	30 WO	3,0	4,0

sb - standard for all screen designs and for cylinders > 400 mm Ø			
	Type	B [mm]	H [mm]
	20 sb	1,5	4,0
	22 sb	1,8	3,7
	28 sb	2,2	4,5
	34 sb	2,8	5,0
	42 sb	3,4	6,5
	50 sb	3,4	7,5

Q - Typical crossbar profiles			
	Type	B [mm]	H [mm]
	Q 20	2,0	2,2
	Q 25	2,0	3,0
	Q 32	4,0	6,4
	Q 35	3,0	5,0
	Q 43	4,0	7,5
	Q 55	4,0	8,0
	Q 63	4,0	9,5

US - Profile Geometry for High-Precision Filtration Tubes			
	Type	B [mm]	H [mm]
	111 US®	0,75	1,8

sb - Special Profile			
	Type	B [mm]	H [mm]
	55 sb	5,0	5,5



Cost-Effective and Reliable

Form filters for the separation of solids and suspended particles from liquids and gases in valves, pipelines, pumps, hydraulic systems and air-conditioning systems. Used in mechanical engineering, the chemical and pharmaceutical industries, the iron and steel industry, power plants, the petrochemical industry, coolant treatment, water treatment and the food industry. As classic surface filters, form filters help prevent machine damage and can generally be cleaned and reused.

We manufacture shaped filters in virtually any shape, geometry and sheet thickness to meet individual customer requirements – from prototypes to large-scale production runs – using all commonly available materials.

To ensure reliable filtration performance, joining and connection methods are selected according to the intended application or your specific requirements.

Shaped filters are manufactured with high precision to customer specifications and drawings in all technically feasible designs. They are available as filter discs (round, rectangular or square), cylinders, cones, half-shells and other shapes, as well as complete filter elements, filter plates and filter baskets.

Depending on the application, they can be butt-, seam- or spot-welded, soft- or hard-soldered, flanged or beaded, as well as deep-drawn, stamped or pressed.



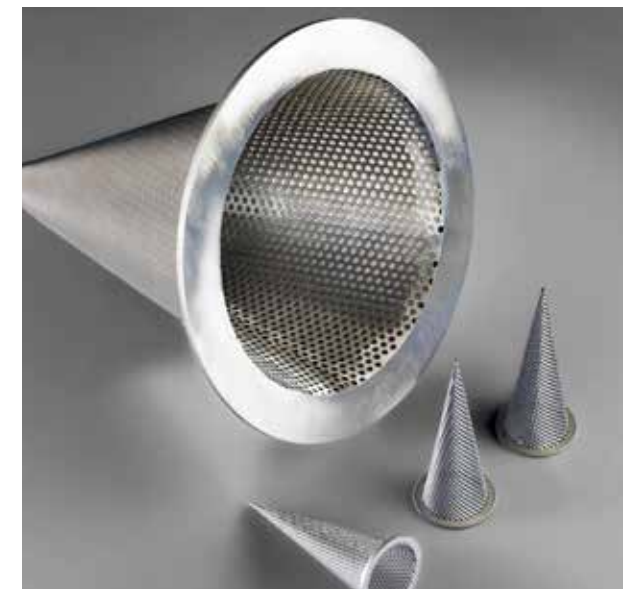
Start-up Filters

Start-up filters are used during the initial commissioning of equipment in pipeline and process plant construction to remove production residues such as slag and welding electrode particles that may have entered the system during assembly and welding operations.

This prevents damage to downstream system components and significantly reduces the risk of costly operational disruptions.

Start-up filters consist of a support element made of perforated metal sheet or wire mesh, onto which the actual fine-mesh filter cloth is mounted, as well as a flange ring for installation in the piping system. The mesh size of the filter cloth is selected according to the specific application requirements.

Filter cloths, support elements and flange rings can be manufactured from all commonly available steel grades.



Dual-Cone Start-up Filters

If the available installation length is insufficient to accommodate a single-cone start-up filter with the required filtration area, a dual-cone start-up filter can usually be installed. This design provides the same filtration area while requiring less installation height.



Filter Cartridges

Filter cartridges are used for the cleaning and regeneration of cutting oils in machine tools.

These filter cartridges, which also operate according to the precoat filtration principle, provide high throughput within a very compact design. They can also be used reliably under high operating pressures.



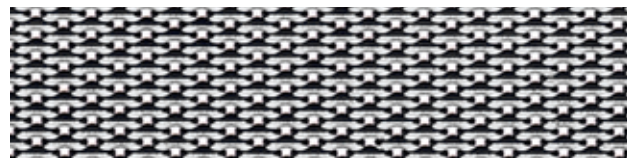
Electroformed Micro-Perforated Plates

Micro-perforated plates have become an important solution for demanding separation processes, particularly in the chemical and food industries.

They complement fine-mesh screening media made from perforated plates and wire mesh in applications requiring the highest precision and optimized flow characteristics.

Manufactured by electroforming from pure nickel, micro-perforated plates are used in a wide range of industrial sectors. STEINHAUS supplies micro-perforated plates as sheets and custom-made segments in dimensions of up to 1,000 × 1,000 mm, with thicknesses ranging from 0.07 to 0.75 mm.

For increased wear resistance and durability, the surfaces can be hard-chrome plated upon request.



Round perforations are available in staggered rows, straight rows, or diagonally staggered rows.

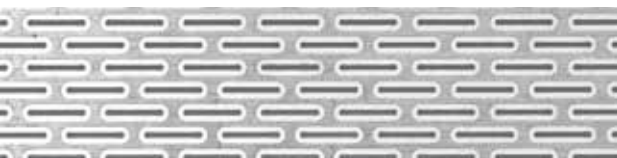
Perforated Sheets with Round, Square, Elongated and Custom-Shaped Holes

- Specifications: Electroformed perforated plates with a smooth surface on the working side and tapered holes in the flow direction; minimum hole diameter of 0.04 mm (round or slotted holes); custom hole shapes available upon request; plate thicknesses ranging from 0.07 to 0.75 mm.
- Material: Soft or hard nickel with a glossy to high-gloss finish.
- Applications: Used as filters, screens or centrifuge linings, printing stencils, or separators for dust, water, oil, gasoline, etc.



The Benefits

- The hole pattern can be customized for any application.
- The working side of the surface is completely smooth.
- The holes, which widen in the direction of flow, ensure maximum resistance to clogging.
- High corrosion, acid, and abrasion resistance (which can be significantly increased with a hard chrome coating).
- Enlargement of the holes due to wear on the screen surface occurs only gradually and is therefore barely noticeable.



Slotted holes arranged either in staggered or straight rows.

Perforated sheets with drilled holes

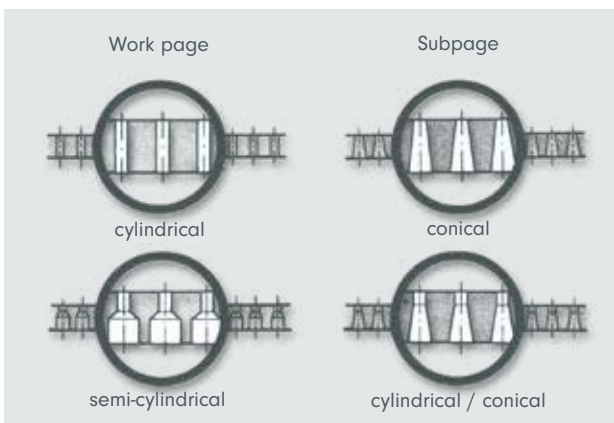
We supply precision-drilled perforated sheets with various hole cross-sectional shapes.

- Material: standard chrome steels and other machinable materials
- Specifications: Hole diameters from 0.7 to 10 mm and plate thicknesses from 2.0 to 10 mm

Hole pattern

Straight row arrangement (rectangular or square)

- Diagonal staggered arrangement
- Equilateral triangular pitch (staggered)
- Isosceles triangular pitch (staggered)



Certified welders, who continuously update their technical knowledge through ongoing training, form the foundation of our manufacturing process.

In addition, STEINHAUS provides in-house training for these employees to ensure that their onboarding is tailored to our specific requirements from day one.

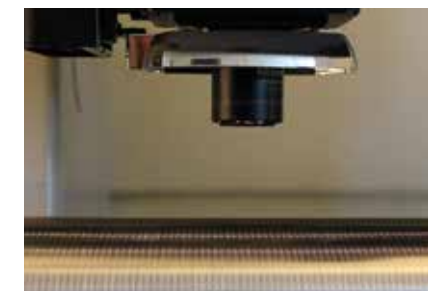
The OPTIMA slotted screen series is manufactured on our own specially developed welding machines. Production is carried out using both circular winding and flat welding processes.

We are committed to meeting our customers' individual requirements. From single pieces to series production, we provide the most cost-effective solution based on our many years of experience and expertise.



STEINHAUS GmbH is part of a corporate group employing approximately 3,000 people across more than 50 companies worldwide. Since its founding in 1922, STEINHAUS has been a reliable partner to industry and a provider of innovative, customized solutions. For us, the highest quality is the top priority.

Currently, more than 160 employees work in accordance with our in-house quality management system, which is certified to DIN EN ISO 9001. We have access to state-of-the-art testing facilities.



Delivery Program

Screen Panels

Screen panels made of polyurethane & steel

Steinhaus MLock

System screen modules

Wire mesh

Perforated plates

OPTIMA

Wedge wire panels

Plain sieve panels

Sieve bends

Slotted screen baskets

High precision filter tubes

Industrial filter media

Wire Mesh Conveyor Belts

Woven & braided wire mesh belts

Rolled baking oven belts (Z-belts)

CLEANBELT device for belt cleaning

LuCoTec Air Spring System

Air spring systems for screening machines & other vibrating machines

MULTOTEC - Process Equipment

Cyclones

Spirals

Slurry pumps

The information given and images in this catalogue are non-binding and represent an approximate description only. They are no guaranteed properties. Alternative designs are possible on request.
Subject to alteration serving technical progress.

Contact us for **on-site consultation** by our experienced **field engineers**.



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