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Perfection in Perforation

Andritz Fiedler PerfTec

We accept the challenge!

ANDRITZ

Drilling and milling technology:

High stability with a maximum open area

When other manufacturers are unable to supply, you benefit from our 120 years of experience in perforating technology.
Using our computer-controlled spindle drilling machines we can produce holes with diameters between .012'' (0.3 mm) and .591'' (15 mm) even in the most challenging metal or plastic materials.

Drilling has definite advantages over punching:

- The critical ratio observed when punching (smallest hole diameter = plate thickness = narrowest bridge) can be broken, making it possible to produce thick plates with small holes and narrow bridges.
- Smooth hole walls and conical hole shapes ensure optimum throughput without plugging the screen.
- High compression load during pressing processes.
- Individual adjustment of hole diameters, conicity of drilling and the open screening area for specialized sieving and screening applications.

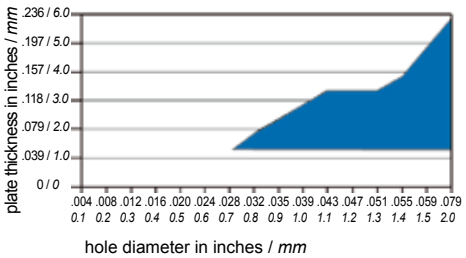
The main advantages of drilled plates are the large open screening area and greater stability. More holes per unit of area improve the screening efficiency.

Often the screen is decisive to the efficiency of a whole plant. For instance, drilled screens used in combination with milled profiles optimize the drainage process for fibrous suspensions and prevent the screen from plugging.

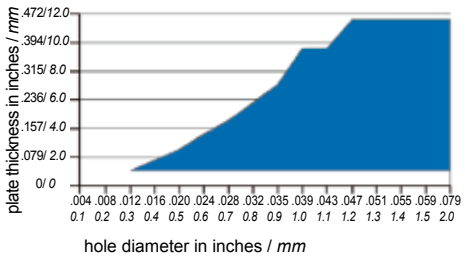
Benefits

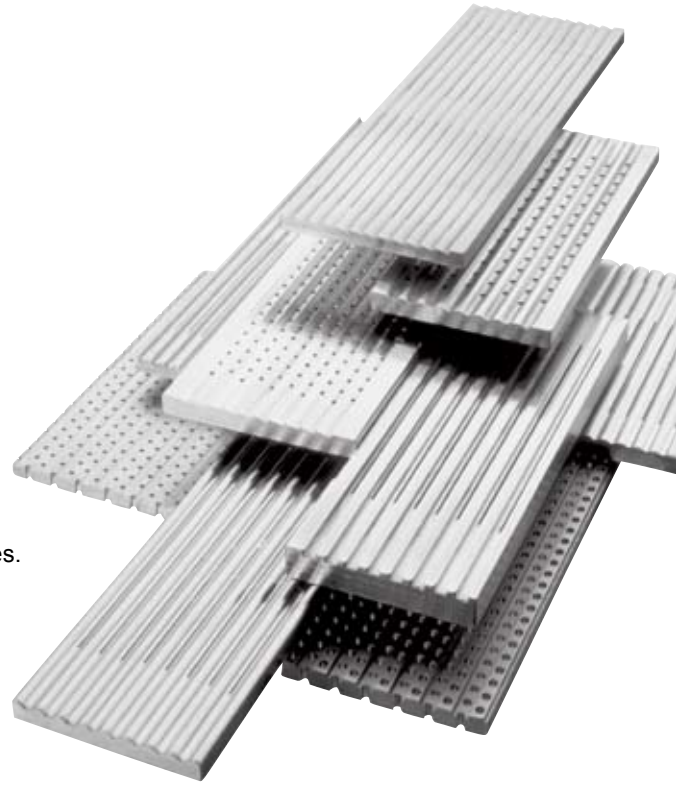
- ***The surfaces will be ground, brushed, blasted with sand or glass beads, or hard-coated, as required***
- ***Conically enlarged hole shapes to prevent plugging***
- ***High stability with compression load***
- ***Burr- and ridge-free surfaces***
- ***Precise slot widths and hole diameters***

Cylindrical drilling



Bicylindrical drilling





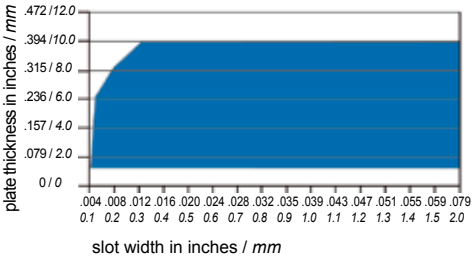
Slots for special screening processes

Slots are better than round holes for certain screening processes. Seeds, crystals and other spherical process stocks are much more likely to plug a round hole than a slot.
Slots make the tiniest hole widths possible. We supply milled screens with slot widths from .004'' (0.1 mm).

In addition to various slot cross sections, like parabolic or trapezoidal, we also manufacture profiled screening plates.

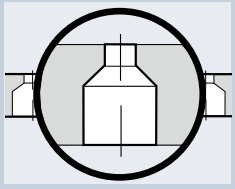
Plates made of many different materials will be flat or rounded, processed to cylinders, cones, press jackets or shells.

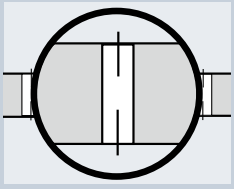
Slot milling

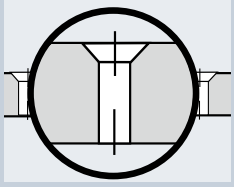


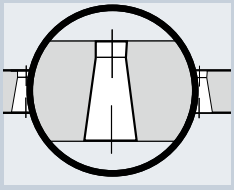
The right hole shape for every job

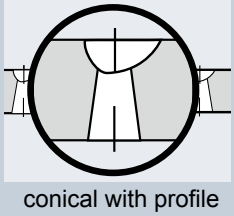
Drilling options:


bicylindrical

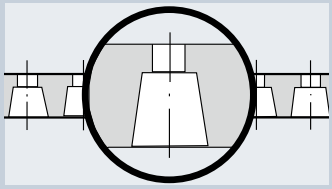

cylindrical

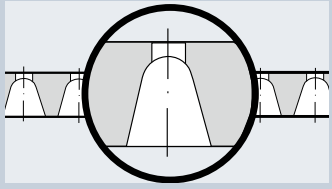

countersunk

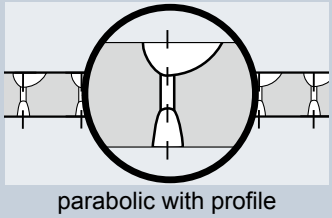

cylindrical konical


conical with profile

Milling options:


trapezoidal


parabolic

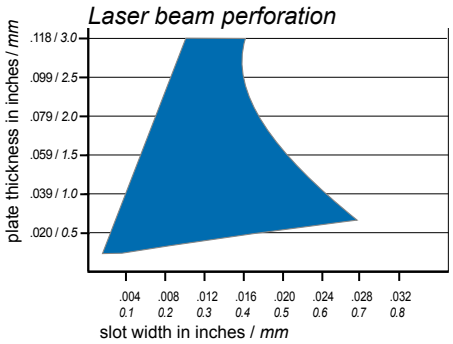

parabolic with profile

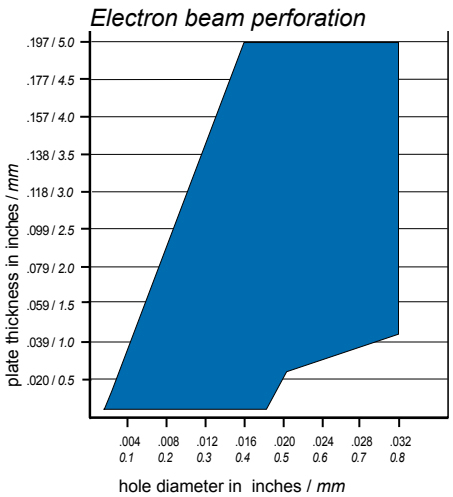
Hi-Tech-Perforation: Laser and electron beam technology for tiny screen openings

Laser and electron beam technology are an excellent supplement to mechanical perforation methods, applied there, where the tiniest screen openings are required. For instance, hole diameters of .012'' (0.3 mm) for the extraction of fruit and vegetable juice, or of just .004'' (0.1 mm) to recover fibre from process water.

Beam perforated screens are plates, made of steel or other materials, which have millions of tiny conical holes or slots.

Smooth surfaces and conical openings guarantee good material flow and high efficiency when screening.





Benefits

- ***Ratios between the apertures and plate thickness of 1:10 or even up to 1:15 are possible***
- ***Slot widths from .002'' (0.06 mm)***
- ***Hole diameters from .001'' (0.04 mm)***
- ***Plate thickness from .008'' - .118'' (0.2 mm - 3.0 mm)***

Areas of application

- centrifuges in the sugar, food and chemical industries
- processing technology
- bowscreens in starch, fruit juice and other foodstuff industries
- for the processing of chemical sludges and floating sewages
- high-power screens for the recycling of plastics, pulp and paper
- screens for paint and pigment manufacture
- process filters/screens for catalysators, ion exchangers, resin traps, etc.

ConiPerf®:

Multi-talented fine perforated plates

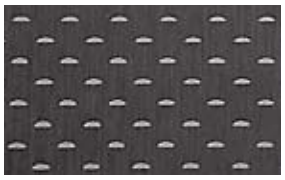
ConiPerf® triangular perforation

The openings of the ConiPerf® triangular perforation have a triangular to half elliptical form, as well as showing a strong conicity.
With rolling of the triangular perforation, the rough surface will be smoothed as requested, producing a slightly changed hole shape but its conicity remains the same.

ConiPerf® slot perforation

Clearly greater open areas, as with the ConiPerf® triangular perforation, will be realized by the oblong openings of the ConiPerf® slot perforation.
According to your requirement, the ConiPerf® slot perforations show open areas from **5% to 27%**.

ConiPerf® triangular perforation


triangular perforation ground


ConiPerf® slot perforation rolled


slot perforation ground

Material	Plate thickness	Hole width
Stainless steel	.016'' - .059'' *0.40mm - 1.50mm*	.004'' - .160'' *0.10mm - 4.00mm*
Unalloyed steel	.020'' - .079'' *0.50mm - 2.00mm*	.004'' - .236'' *0.10mm - 6.00mm*

Material	Plate thickness	Slot perfotation
Stainless steel	.016'' - .040'' *0.40mm - 1.00mm*	.004'' x .079'' - .031'' x .160'' *0.10mm x 2.00mm - 0.80mm x 4.00mm*
Unalloyed steel	.020'' - .040'' *0.50mm - 1.00mm*	

Benefits

- ***Ratios between the apertures and plate thickness of up to 1:10***
- ***High resistance to wear***
- ***Stability***
- ***Conicity of the openings***
- ***Directed flow***
- ***Documented pressure loss measurements***

Areas of application

General applications
- aeration bottoms in silo and bunker towers
- pneumatic conveyor bottoms
- lining screens in nutty slack centrifuges

Food industry
- working screens for starch flour centrifuges
- drainage screens in centrifuges
- mill screens
- air or gas distribution beds in fluidized bed dryers and coolers

Chemical industry
- as centrifuge screens, for ammonia, ferrous sulphate, Glauber´s salt, crystal soda, sodium suphate, calcium, potash, etc.
- as mill screens for crushing processes

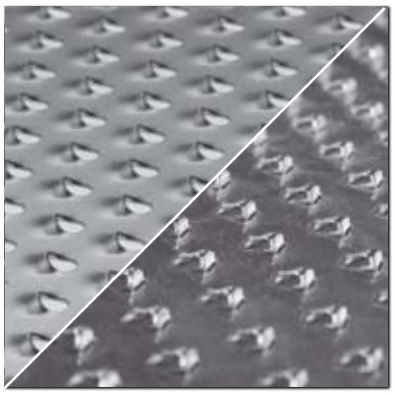
Processing technology
- plastic crushing
- drying and cooling foundry sand
- producing wood splint for chipboards

Punching technology:

The most inexpensive means to the end

Round perforations
from .016'' (0.4 mm) hole diameter in stainless steel with .016'' (0.4 mm) plate thickness; from .008'' (0.2 mm) hole diameter in stainless steel plate up to .008'' (0.2 mm).

Slot perforations
from .012'' (0.3 mm) x .236'' (6 mm) in .002'' (0,5 mm) plates, respective .016'' (0.4 mm) x .236'' (6 mm) in .031'' (0.8 mm) plates.



Special perforations
Numerous tools are available for rasp respective special perforations.

We punch plates made of steel, aluminum, stainless steel, brass, copper, titanium and plastic.

With modern punching automation, we are prepared to manufacture almost every conceivable hole pattern, with unperforated areas - program-controlled, with exact repetition and with great precision.

Small series or repeat individual orders can be manufactured economically thanks to the program memory.
We deliver standardized plates in accordance with DIN 24 041 and ISO Standards as well as plates between .016'' (0.4 mm) and .591'' (15 mm) thickness in special designs according to your drawings.

Punching is the most inexpensive procedure for the perforation of metals, although the “critical ratio” limits the ratio between hole diameter, plate thickness and narrowest bridge to approximately 1 : 1 : 1. Thanks to refined technology, we come very close to the boundaries of that which is possible. In certain cases we can even manage to drop below the „critical ratio“.

We manufacture perforations which cannot be punched, by means of drilling and milling technology.

As specialist for small series and one-off-productions we point out that we do not produce bulk goods, this means standard perforations from the coil.

Areas of application

- Reciprocating and vibrating screens in the processing industry
- Screens and filter plates for the beverages and food industry
- Plant and container construction
- Protective screens for pipeline construction
- Screens for presses and purification plants
- Screening elements as well as rasping, screening and pulverizing inserts for the mill building industry
- Acid-resistant screens for chemical factories

Component construction:

Processed perforated plates, which are ready for installation

We are specialists in processing perforated plates to produce components which are ready for installation.
The surfaces of the perforated plates will be high-quality ground, brushed, blasted with sand or glass beads, electropolished, or chrome-plated, as required.

Whatever the job, cutting, rolling, levelling, rounding, edgeworking, bending, deburring, grinding, lathe turning or forming, our customers have our high-performance machines and 120 years of experience at their disposal.

Areas of application for pre-finished components:

- Food industry
- Pump industry
- Power station construction
- Mill building
- Processing industry
- Waste water and environmental protection technology
- Textile industry
- Drainage presses
- Separation technology
- Pharmacy
- Chemistry

Diversity in Perforation

from a single source

Andritz Fiedler is one of the leading companies worldwide that has access to all existing perforating technologies: punching, drilling or milling technology, electron and laser beam technology as well as ConiPerf®.

A main focus lies in the processing of these perforated plates. Andritz Fiedler offers machine components ready for installation, made of various kinds of material, mostly of stainless steel.

More than 500 satisfied customers in various industries in the world benefit from our consolidated knowledge about their business processes. What can we do for you?

From a single source:

- ***Drilling***
- ***Milling***
- ***Punching***
- ***Micro-perforation***
- ***ConiPerf®***
- ***Component construction***

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