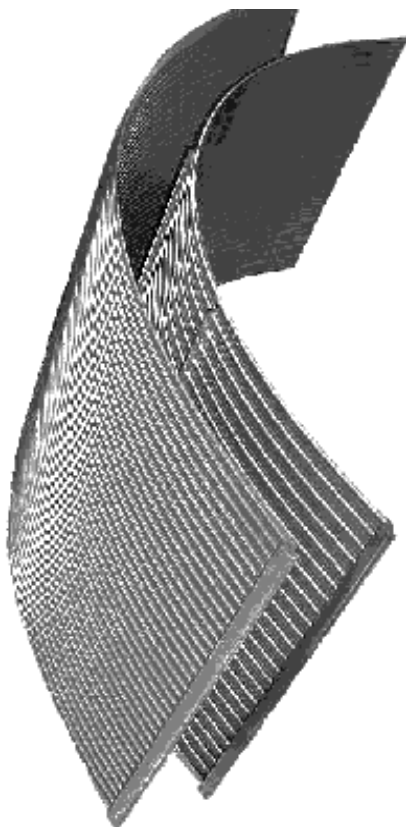




Screens for the Starch Industry



Trislot® designs and manufactures stainless steel filter elements, support cores and separation screens based on V-shaped profile wires. These high precision filtration elements are created from a combination of top-quality profile wires and a variety of support wires which are resistance welded or assembled in a highly automated production process. Our proprietary leading-edge production technology, innovative design from our engineering staff and close cooperation with our customers assures you a cost-effective, tailor-made solution for all your filtration needs.

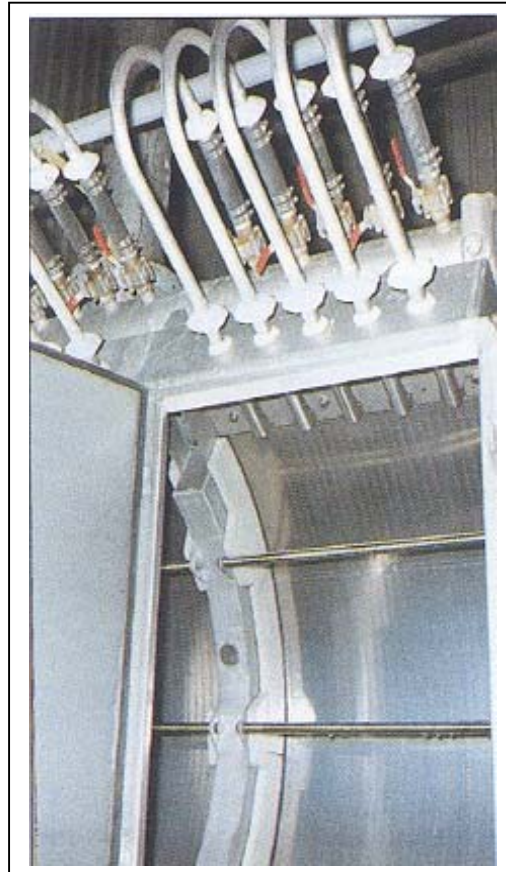
120° Screen

One of **Trislots** show-pieces is the 120° screen. It is a fixed concave screen used for fibre washing and dewatering in the wet corn milling process: a suspension of starch, gluten and fibre flows over the screen to catch fibre, but allow starch and

gluten to pass through. The fibre is collected, slurried and screened again to reclaim any residual starch or protein.

Trislot® has been for over 30 years the supplier to world-leading equipment manufacturers for the starch industry.

The **Trislot® 120° looped** screens are considered as the best on the market. Thanks to new production technology Trislot® has introduced **welded** screens having the same precision as looped screens. Both types of screen have their own advantages and are complementary in the corn wet milling process.



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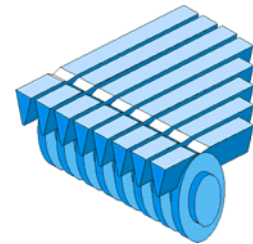
Tel. +32-56-62.72.22. Fax +32-56-62.72.62.

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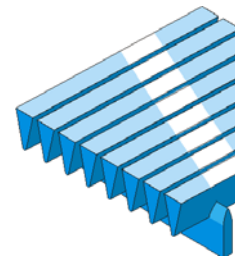
Website: www.trislot.be

Trislot® one of the few companies world-wide manufacturing the 120° screen in a looped screen version and a welded screen version.

The **Trislot® looped screen** is a mechanical construction where the surface profiles are provided with a loop and are connected to each other through round cross wires. Thanks to the fact that there is no heat production during the manufacturing a very accurate slot width is obtained.



The **Trislot® welded screen** consists of triangular surface profiles welded onto support profiles at a very accurate distance next to each other. This is done by resistance welding.



The characteristics of the 2 types of screens are:

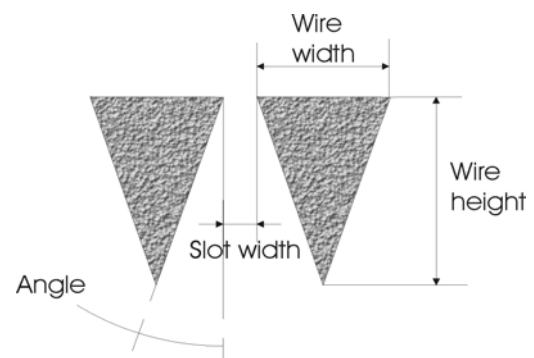
Looped screen								Welded screen							
<ul style="list-style-type: none"> Very precise slots (no deformation by welding) 								<ul style="list-style-type: none"> Precise slots 							
<ul style="list-style-type: none"> No tilt on the wires 								<ul style="list-style-type: none"> With or without tilt on the wires 							
<ul style="list-style-type: none"> Polished or unpolished version 								<ul style="list-style-type: none"> Polished version (unpolished version only available with tilt) 							
<ul style="list-style-type: none"> Reversible 								<ul style="list-style-type: none"> Reversible (only if no tilt is used) 							
<ul style="list-style-type: none"> Pitch cross wire: 25 mm 								<ul style="list-style-type: none"> Pitch support wire: 17 mm (other possible on request) 							
Looped screen specifications								Welded screen specifications							
Dimensions in mm.				Nominal open area (%)				Dimensions in mm.				Nominal open area (%)			
Wire type	Width	Height	Angle	50μ	75μ	100μ	150μ	Wire type	Width	Height	Angle	50μ	75μ	100μ	150μ
8A	0,85	1,2	10°	5,5	8,1	10,5	15	10S	0,75	1,425	10°	6,25	9,1	11,8	16,7
10A	0,95	1,2	13°	5	7,3	9,5	13,6	12S	1	2	10°	4,8	7,0	9,1	13

Our experience has been that thinner wires than the 0,75 mm wide are too weak to assure a precise slot opening under the pressure of the flow over the screen.

Slot precision

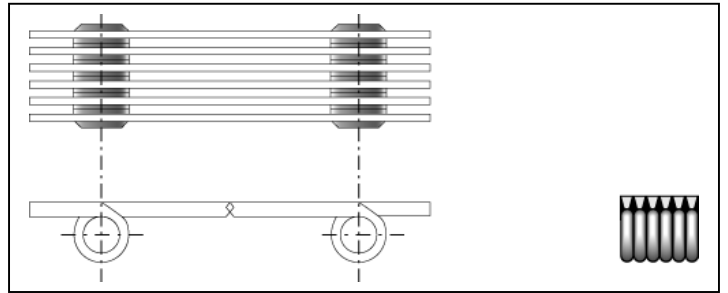
The slot precision is one of the most important characteristics of the **Trislot®** screen as it determines the dimensions of the fibres passing through the screen. Intrinsicly the looped screen has a higher precision on the slot width because:

- only a mechanical operation without heat application is used to assemble the screen, so no deformation of the wire because of the heat can occur



- the wires are supported vertically by the loops, keeping them perfectly straight and aligned, so that no deviation of the slot width can occur by unequally placed wires

Trislot has developed new production technology which makes it possible to obtain a slot precision for welded screens very close to the one of looped screens.



The slot widths of the screen are controlled during manufacturing by an electro-optic system to determine the mean measured slot size and the standard deviation.

This guarantees the superb **Trislot®** quality.

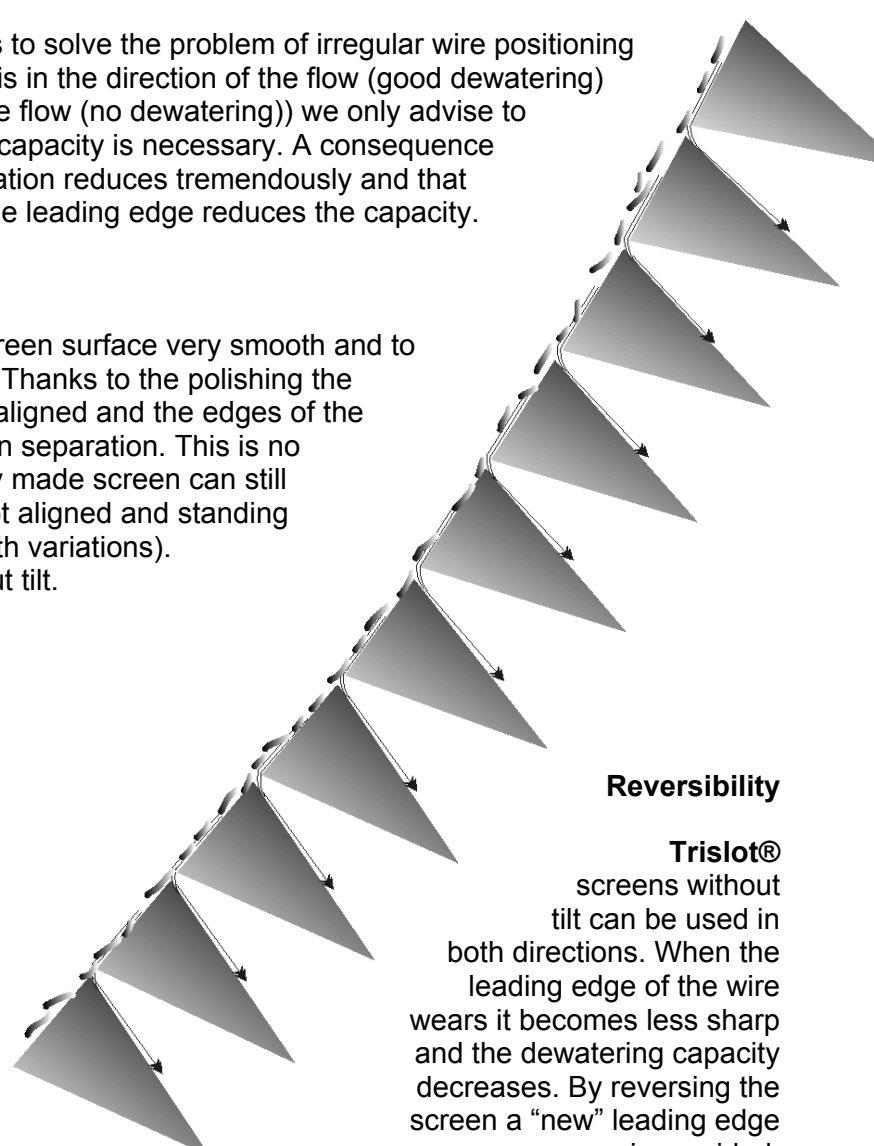
Wire tilt (only for welded screens)

While tilt is used by some manufacturers to solve the problem of irregular wire positioning (in some parts of the screen the wire tilt is in the direction of the flow (good dewatering) and other parts the wire tilt is towards the flow (no dewatering)) we only advise to use tilt in places where high dewatering capacity is necessary. A consequence of wire tilt is that the quality of the separation reduces tremendously and that after a certain time the wear on the profile leading edge reduces the capacity.

Polishing

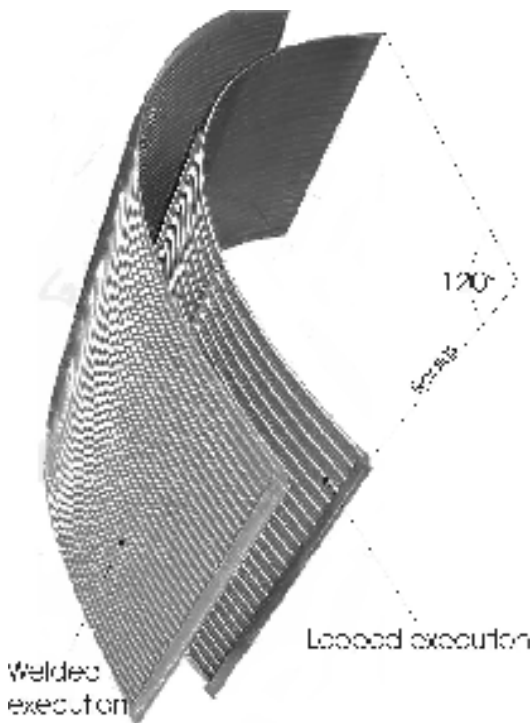
Polishing is the only way to make the screen surface very smooth and to optimise the performance of the screen. Thanks to the polishing the surface of each wire becomes perfectly aligned and the edges of the wires are sharpened to obtain a precision separation. This is no cosmetic action because only a perfectly made screen can still be improved by polishing (if wires are not aligned and standing straight, the polishing will cause slot width variations).

Polishing is only done on screens without tilt.



Reversibility

Trislot® screens without tilt can be used in both directions. When the leading edge of the wire wears it becomes less sharp and the dewatering capacity decreases. By reversing the screen a “new” leading edge is provided.



Lifetime

The lifetime of the **Trislot®** screens are mainly determined by the type of slurry, the abrasive character, the distribution of the slurry over the screen and the nozzle pressure.

The 316L stainless steel used to manufacture the **Trislot®** screens is specially treated to obtain a hard surface. In this way wear is reduced to an absolute minimum to guarantee a maximum lifetime. Also the fact that **Trislot®** uses taller wires than other manufacturers makes that the wear has less impact on the slot opening.

To extend further the lifetime, **Trislot®** is equipped to do repolishing of worn screens.



Other Trislot products for the starch industry

Besides the 120° screens, **Trislot®** manufactures also the other screens used in the starch industry:

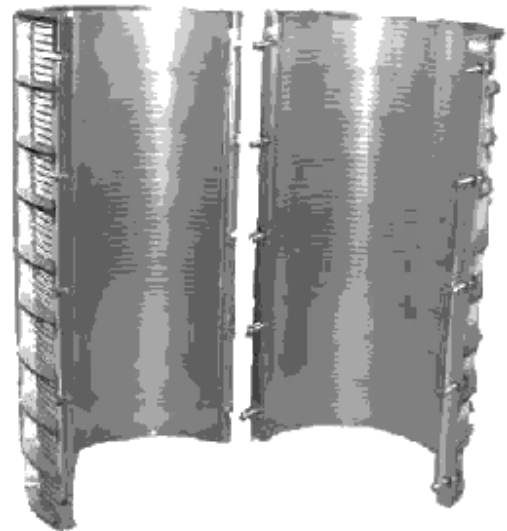
- 300° screens, looped or welded
- 270° screens, looped or welded
- 180° screens, looped or welded
- welded gluten screens
- finishers



Other places where Trislot screens are used

in starch plants are:

- *grain cleaning*: vibrating screens separate trash from the grain
- *corn steep tanks*: conical screens are used in the steep tank to separate the corn from recirculated water
- *fiber and germ washing*: rotary drums remove starch, gluten or husks that remain after the germ is separated
- *separation of gluten and starch*: centrifuge baskets



Trislot Quality Assurance

- ISO 9001 Certified
- Trislot focuses on Total Quality Management
- 50 years of experience

Conclusion

Trislot® screens are high quality product allowing corn refiners to optimise the performance of their process at the critical separation points.

References

Trislot® has supplied wedge wire screens to starch production plants and cooperates with engineering companies active on that market. References can be submitted on request and after discussion with our customers.

Trislot®

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