Clear Spa - Process and effluent screening solutions

OPTIMA
INTERNATIONAL LTD

Helping businesses, whatever your specialism

- Abattoir Waste
- Brewing, Malting & Distilling
- Fish Processing
- Food Processing
- General Industrial Applications
- Mineral Processing
- Pet Food Processing
- Water & Waste Water Treatment

Optima International manufacture and produce a wide range of Clear Spa filtering products which have been designed to meet the rigorous needs of todays screening and filtration markets.
They are tested to perform in a variety of demanding and complex environments.

nqa. ISO 9001 Registered
UKAS QUALITY MANAGEMENT 015
Achilles®
Apprenticeships

Optima International are renowned as a world-class problem solver and our broad range of products provide the highest levels of long life and reliability, whatever your working environment.

We offer screening solutions to suit a wide variety of applications and, with our knowledge of wedge wire and our commitment to quality research and development, we continue to be at the forefront of screening and filtration technology.

Our product range covers filtration equipment to remove solids from liquid flows down to 0.10 and up to 18.00mm aperture.

From a simple Q-screen system to our larger motor driven filters, we are able to handle low to high flows and provide custom-made systems engineered to suit your usage.

Furthermore, our team of designers and engineers are capable of solving complex engineering tasks and our extensive knowledge within the filtration industry has enabled us to provide a huge number of solutions to a wide variety of applications worldwide.

Combined with our design experience is our ability to manufacture both standard and bespoke process filtration equipment and consumables, enabling us to supply a wide range of world class engineered solutions, right from our UK facility across the globe.

So, if you're needing filtration and screen products for complex, demanding or heavy duty applications, Optima International Clear Spa division is your ideal partner.

Our product range

- **Clearotex**
- **Rotary Drum Screen**
- **Compactor**
- **Q-Screen**
- **Dewatering Screen Conveyors**
- **Rotary Pressure Filters**

The Clearotex (External Feed)

Optima have an extensive range of External Fed Rotary Drum Screen sizes which we market under our Clearotex range.

The Clearotex machine consists of a rotating spirally wound wedge wire drum with apertures to suit customer requirements.

This product is used for fine solid / water separation which consist of floating or buoyant particles that need to be removed from the effluent. The particles are separated by sticking to the rotating drum which are then scraped from the surface of the wedge wire drum with a spring-loaded scraper blade. The solids then discharge into a skip or other machinery for further treatment.

The screened liquid however travels through the drum to the outlet passing through the drum twice which cleanses the drum before leaving through the liquid outlet at the bottom of the machine.

The Clearotex machine also has a pressurised water spraying system within the drum to help keep the drum clean and avoid blinding.

Typical applications include:

- General food processing effluent
- Pelagic fish processing effluent
- Slaughter house waste
- Fruit juice factory effluent
- Bakery waste effluent
- Plus many more applications

Please contact us for more details and sizing of the equipment.

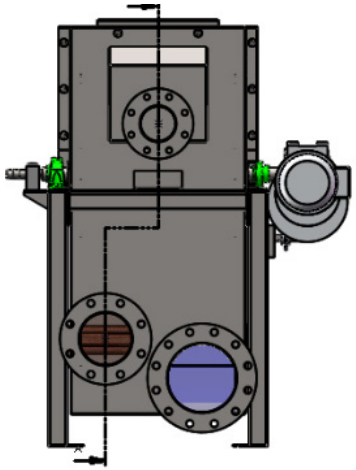
Features:

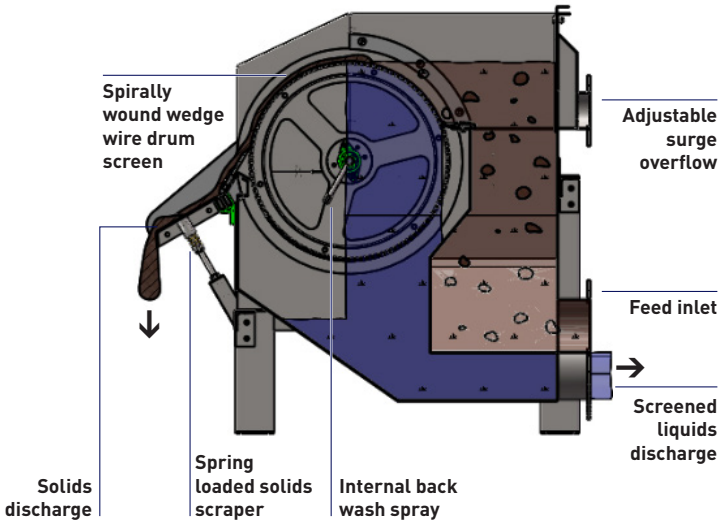
- Externally fed
- Wedge wire spirally wound drum
- High capacity throughputs
- Variable speed drive
- Self-cleaning wash systems
- Mechanical solids removal (spring loaded scraper bar)
- Adjustable overflow facility

Orange juice processing - CX 220. Optima ensure the size of machine suits the flow requirements.

Fruit waste processing

Cattle market waste processing





Clearotex flow capacities (M³/Hr)

Model	Screen Apertures (mm)									
	0.25	0.50	0.75	1.00	1.50	2.00	Drum Ø	Drum Lth	Kw	Weight Kg
CX-50	32	51	70	90	82	126	624	500	1.50	280
CX-100	64	112	151	184	230	260	624	1000	1.50	420
CX-150	97	169	226	276	346	390	624	1500	1.50	560
CX-220	144	251	339	410	512	578	624	2200	1.50	730
CX-300	194	338	456	552	690	780	624	3000	1.50	810
CX-400	232	406	547	662	828	935	624	4000	2.20	940

Note. Figures based on average flowrates with 5% solids content. Please contact us for more specific applications.

Rotary Drum Screens

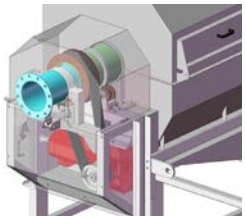
Optima have a range of Internal Fed Rotary Drum Screen sizes which we market under our RDS product range, including the TF6-S shown here.

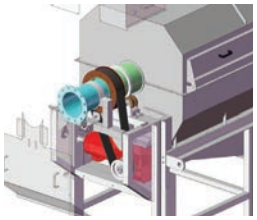
The TF6-S was designed to meet the needs of a major client who required screening solutions in anaerobic digestion plants. The TF6-S was born and Optima have now supplied several units, improving design and efficiency along the way, in order to ensure optimum performance and reliability.

Features:

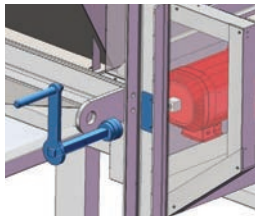
- Internally fed
- Interchangeable conical and parallel wedge wire or perforated plate element
- Self-cleaning wash system
- Conveyed solids removal
- Belt drive
- Solids discharge (compatible with compactor inlets)
- Clear viewing guard on drive arrangement
- Bolted side panel access for ease of maintenance, cleaning and inspection procedures
- Turning handle on motor allowing safe manual rotation of the drum during inspection and cleaning procedures

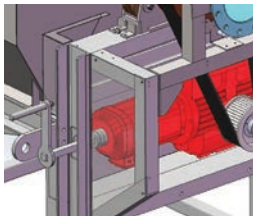
Drive arrangement and safety features





The clear casing allows viewing and inspection whilst machine is in operation.





The turning handle is used for the purpose of rotating the drum for inspection and cleaning purposes whilst machine is isolated.

A sample of our Rotary Drum Screens

RDS TF4
Separation of dairy waste

RDS2-S Special
Separation of zirconium beads

RDS 2
Mounted on a platform

RDS3-S
Separation of food waste

Rotary Drum Screen flow capacities (M³/Hr)

Model	Screen Apertures (mm)									
	0.25	0.50	0.75	1.00	1.50	2.00	Drum Ø	Drum Lth	Kw	Weight (Kgs)
RDS-1	14	26	33	40	48	56	500	600	0.55	230
RDS-2	24	35	46	57	74	101	700	800	0.55	520
RDS-3	39	58	77	96	125	169	900	1000	0.75	740
RDS-4	55	79	106	131	171	231	1000	1200	1.10	850
RDS1-S	24	44	60	74	96	113	500	1000	0.55	440
RDS2-S	40	73	101	124	161	189	700	1200	0.55	740
RDS3-S	66	120	164	202	262	308	900	1500	0.75	910
RDS4-S	87	159	219	269	348	410	1000	1800	1.10	1050
RDS5-S	129	235	322	397	514	605	1000	2650	2.20	1320
TF6-S	186	339	465	573	741	873	1217	3147	2.20	1560

Note. Figures based on average flowrates with 5% solids content. Please contact us for more specific applications.

Rotary Drum Screens (Continued)

The RDS machine consists of a rotating wedge wire drum with slots to suit customers requirements which run down the length of the drum allowing for screening from inside to out.

This product is used for solid / water separation which usually consist of more dense particles that need to be removed from the effluent. The effluent enters the inside of the rotating drum through the feed inlet and then passing over the distribution weir on to the drum surface.

The units have 2N° access panels for ease of maintenance, cleaning and inspection procedures.

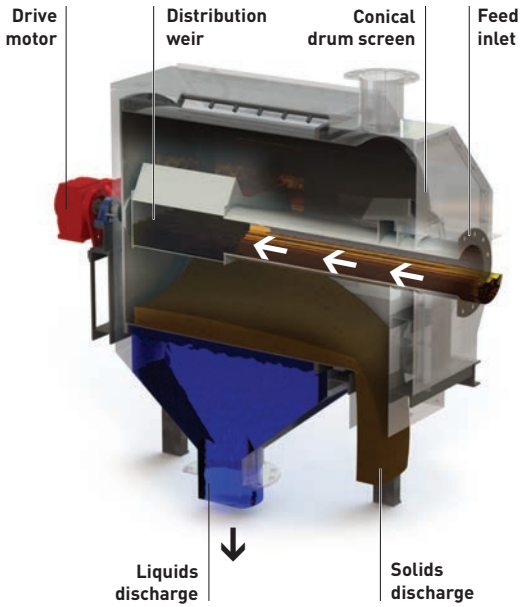
A turning handle on motor allows safe manual rotation of the drum during inspection and cleaning procedures and a clear viewing window on inlet end allows inspection of the drum during operation.

The particles and water separate as the drum rotates with the solids staying on the screen and passing down the length of the drum helped by internal flights or a continuous scroll.

The solids will then discharge into a skip or other machinery for further treatment.
The screened liquid travels through the drum before leaving through the liquid outlet at the bottom of the machine. The RDS machine also contains an external pressurised water spraying system to help keep the drum clean and avoid blinding.

Typical applications include:

- General food processing effluent
- Slaughter house waste
- Dairy effluent
- Bead mill recovery and cleaning
- Sewage treatment
- Many more applications




Our engineers understand that complex applications need well considered solutions for efficiency and cost-effective performance.
At Optima International, we pride ourselves on delivering every time.
OPTIMA
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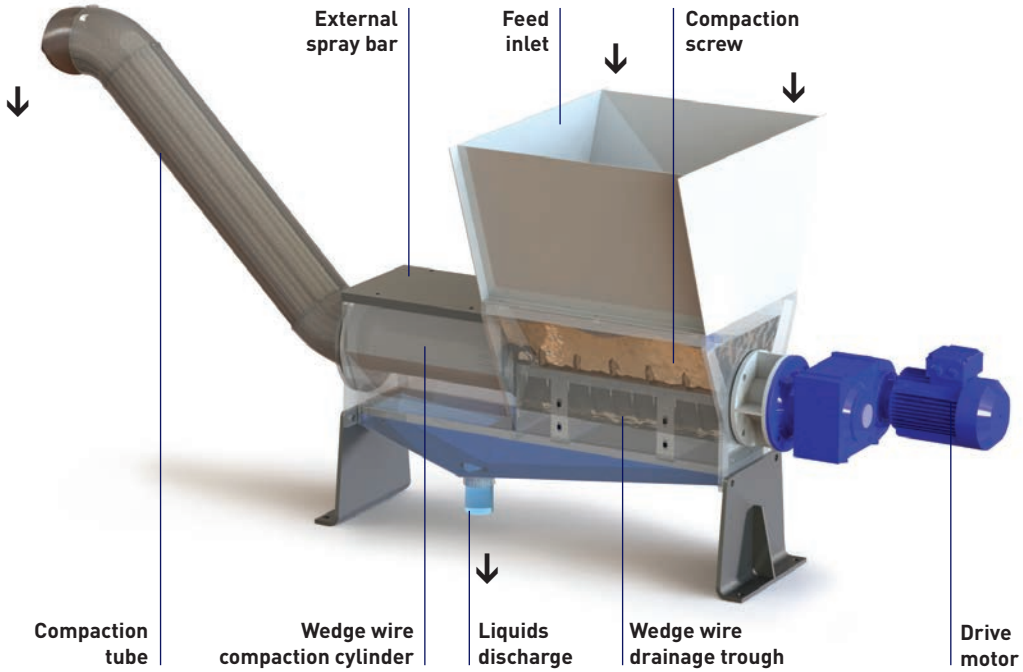
Compactors

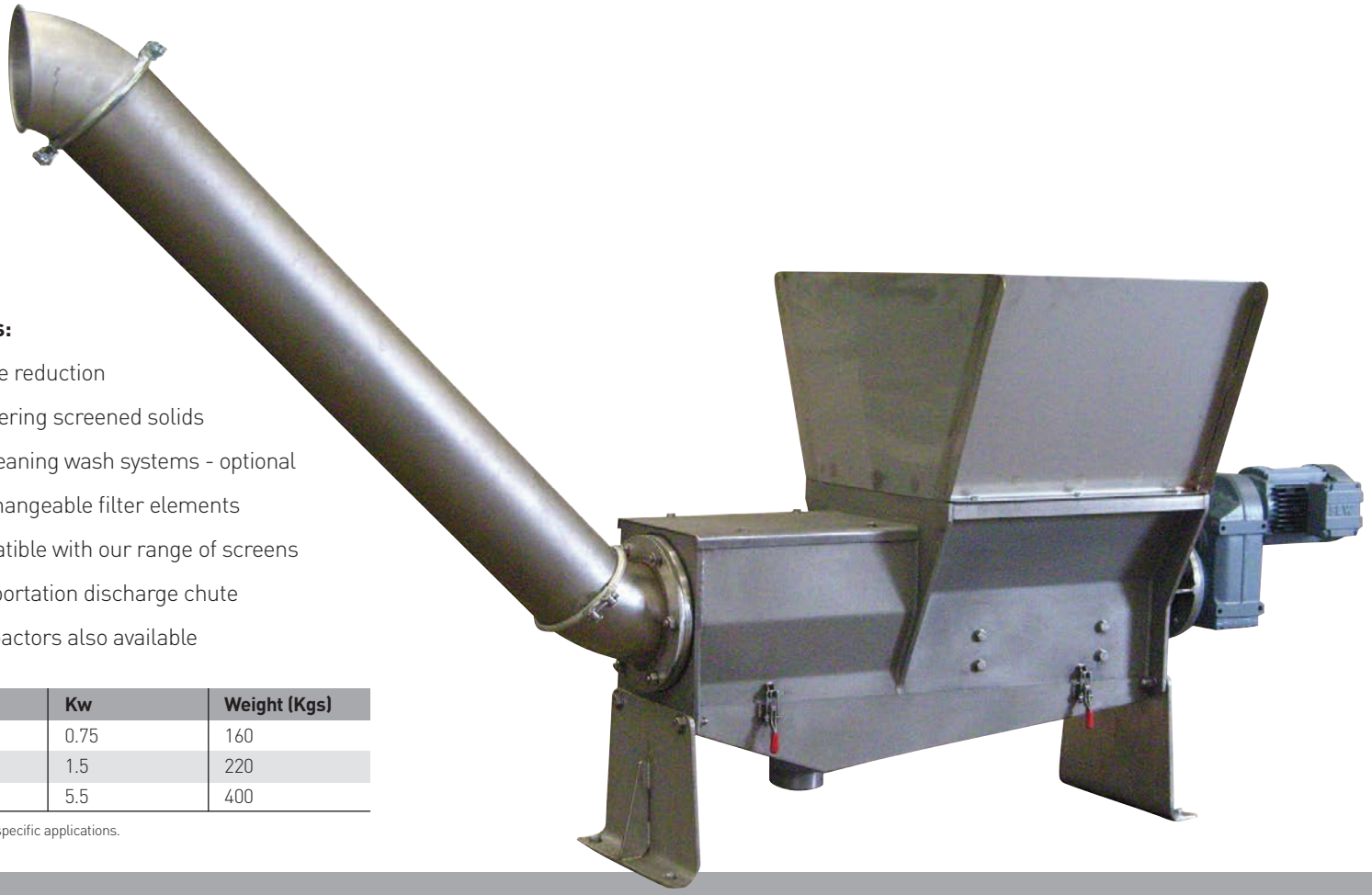
Optima have a variety of Compactor sizes which we market under our CP product range.

The Compactor is mainly used following the pre screening of effluent to help reduce the moisture content within the dewatered solids. The compactor consists of a feed inlet, compaction trough cylinder, screw and compaction tube - all fitted within a stainless steel housing.

The dewatered solids enter the feed inlet and are conveyed by a screw through the wedge wire trough into the compaction cylinder.

Liquid is squeezed out at this point which then leaves the compactor through the liquids discharge at the bottom of the machine. The dryer solids then work their way up the compaction tube before eventually falling out of the chute into a skip or other machinery for further treatment.





Typical applications include:

- General food processing effluent
- Slaughter house waste
- Malting effluent
- Plus many more applications

Please contact us for more details and sizing of the equipment.

Features:

- Volume reduction
- Dewatering screened solids
- Self cleaning wash systems - optional
- Interchangeable filter elements
- Compatible with our range of screens
- Transportation discharge chute
- Washpactors also available

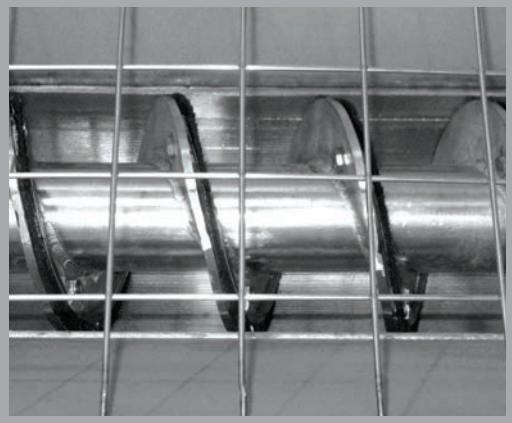
Model	Length	Width	Capacity	Kw	Weight (Kgs)
CP140	1625	430	1.5M³/Hr	0.75	160
CP240	2250	580	2.5M³/Hr	1.5	220
CP300	4000	690	7.5M³/Hr	5.5	400

Note. Figures are a guide only based on average solids throughput. Please contact us for more specific applications.

CP-300 operating on fruit waste

CP-300 operating on fruit waste

Internal screw over wedge wire trough



CP-140 in process

Q–Screen Unit (Static Run Down Screen)

Optima have a variety of Static Run Down Screen sizes which we market under our Q-Screen product range.

The Q-Screen unit is a static screening component which consists of curved wedge wire panels with slots to suit customer requirements. The wedge wire panels are fitted within a purpose designed stainless steel or carbon steel housing providing the screen feed head box, the screen underflow collector, the dewatered solids discharge chute and is supported on stainless steel legs.

This product is used for solid / water separation, has no moving parts and is self-cleaning, hence the reduction in maintenance.

The effluent enters the Q-Screen unit via the feed inlet before passing over the feed distribution weir. The water passes through the wedge wire panels leaving the solids to collect on the surface of the wedge wire panel. The solids pass down the surface of the panel and build up over time before eventually falling off the solids discharge chute into a skip or other machinery for further treatment.

The screened liquid travels through the wedge wire panel before leaving through the liquid outlet at the bottom of the unit. The Q-Screen unit can also be fitted when necessary with a pressurised water spraying system to help keep the wedge wire panel clean and avoid blinding.

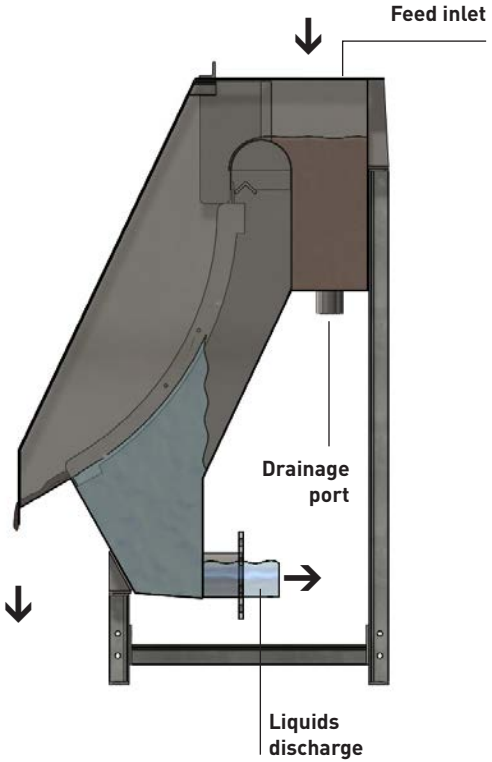
Features:

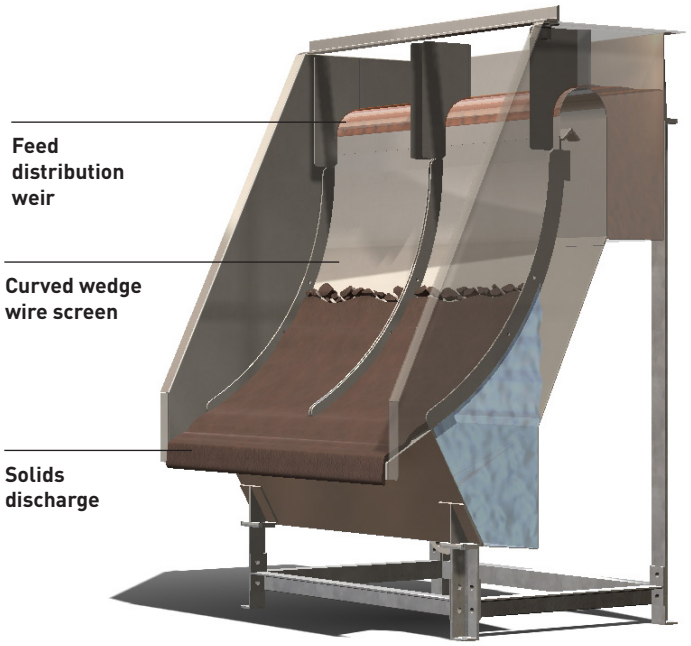
- Static system
- Low maintenance
- Reversible wedge wire screen panels
- Controlled pump or gravity fed
- Gravity solids discharge

Typical applications include:

- General food processing effluent
- Slaughter house waste
- Dairy effluent
- Textile effluent
- Malting effluent
- Laundry effluent
- Plus many more applications

Please contact us for more details and sizing of the equipment.





Q-Screen flow capacities

Aperture	Screen Radius 18"		Screen Radius 30"		Screen Radius 48"		Screen Radius 60"	
(mm)	GPM/FT	M³/Hr/Mtr	GPM/FT	M³/Hr/Mtr	GPM/FT	M³/Hr/Mtr	GPM/FT	M³/Hr/Mtr
0.25	5	4	8	7	13	11	16	14
0.50	9	9	16	14	25	23	31	29
0.75	16	14	26	24	42	38	52	48
1.00	23	21	39	36	63	57	78	72
1.50	39	36	65	60	104	95	131	120
2.00	47	43	78	72	125	114	157	144

Note. Figures based on average flowrates with 5% solids content. Please contact us for more specific applications.

Standard screen dims

18" Rad 457mm	30" Rad 762mm	48" Rad 1219mm	60" Rad 1524mm
Width of screen (mm) + 86 (mm)			
Height (mm)			
1180	1540	2150	3060
Depth (mm)			
680	940	1200	1450
Length of fabric over curve (mm)			
479	800	1276	1600

Case study

World class engineering solutions

Optima were approached by a company in Norway specialising in the manufacture and supply of products to the pharmaceutical sector and many more applications from a bi-product of sea weed.

Our client requested Optima's expertise and knowledge in order to find a solution to concerns they had in part of their manufacturing process.

A de-watering screw conveyor was already in operation on site but it was not producing the results required resulting in problems further down the line in their process.

The client advised that a further liquid reduction of approximately 2-3% during de-watering would solve the problem they had.

Optima made a site visit to the factory in Norway and after intensive dialogue with the client outlining their requirements and further design/calculation work back at Optima, a solution was found.

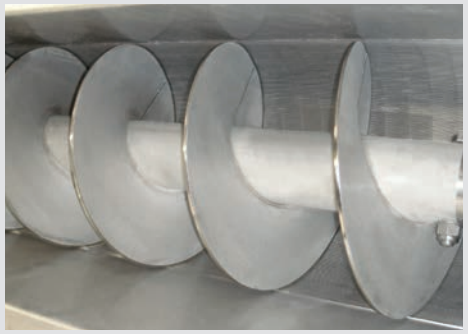
The client request was for 3Nº De-watering screw conveyors. On approval of design and calculations from the client, the conveyors were then manufactured and delivered.

After commissioning of the units in Norway and several weeks of operation, the results were extremely encouraging, in fact to quote their project manager "The de-watering screw conveyors are not only performing to our requirements, they are exceeding all our expectations".

They continue to work successfully and an order for a further 6Nº units was placed.

De-watering Screw Conveyor

Optima International Ltd manufactured and supplied de-watering screw conveyors in the clients process environment in Norway.



Internal screw and de-watering trough.


OPTIMA
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Wedge wire products for your business

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