

CONTRA-SHEAR™: SUBOSCREEN®



THE CONTRA-SHEAR™ SUBOSCREEN® IS A SELF-CLEANING IN-CHANNEL ROTARY FINE SCREEN.

Introduced in 1986, the *Suboscreen* is a unique, in-channel, rotary screen suitable for fine screening of sewage and industrial effluent. Offered in gap sizes ranging from 0.04 in. to 0.2 in. (1 mm to 5 mm), the *Suboscreen* is self-cleaning, has a low head loss and is particularly suited to handle high flow rates.

The *Suboscreen* drum is constructed out of Vee-Wire®. The Vee-Wire profile is unique to Johnson Screens® and is optimised for fine separation resulting in capture of up to 90 percent of all particles larger than the gap size. The Vee-Wire

drum is robust and easily cleaned by using sparge water at a moderate pressure.

The *Suboscreen* assembly comprises of a rotating drum supported on two sets of trunnion whels at the inlet end and a bearing at the rear. A heavy duty HTD belt linked to the drive system drives the screen drum. The Drainer Screw Press (DSP) is an integral part of the *Suboscreen* assembly and combines washing, de-watering, conveying and compaction in a single unit.



OPERATION METHOD

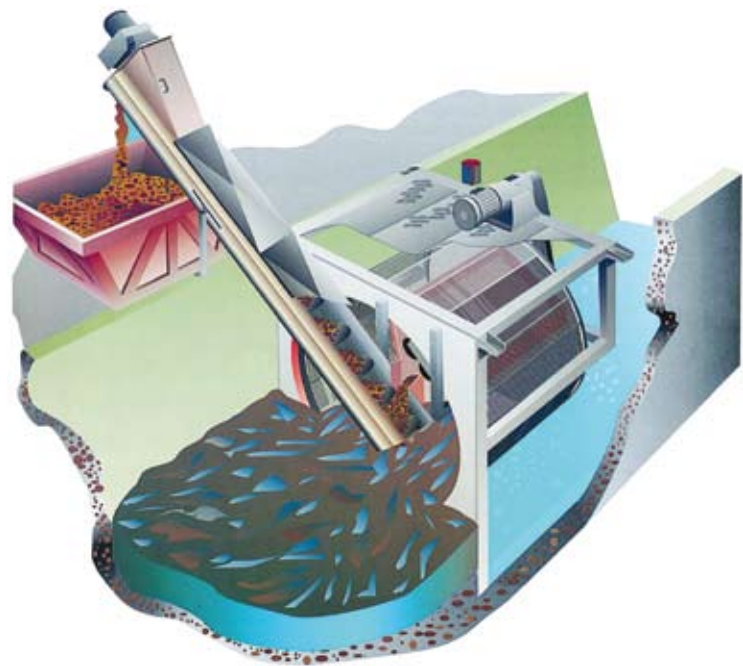
The operation of the Suboscreen® is controlled by differential level sensors, timer or a flow signal. The rear end of the Suboscreen drum is sealed, resulting in a 90 degree change in direction of the effluent flow. The screened effluent exits the Suboscreen through the sides and the bottom.

A polyurethane drum seal with a metal insert ensures a tight fit and prevents effluent from bypassing the screen.

Lifting staves mounted on the inside of the drum lift the screened solids and deposit them into an internal flume. The solids from the flume are pushed into the inlet of the DSP by a water jet where they are washed, de-watered, conveyed and pressed before discharge.

A system of internal and external sparge pipes operates intermittently and ensures that the screen drum is kept clean.

Recycled effluent if suitable, is normally used as sparge water resulting in savings in operation costs



The DSP has three distinct zones viz.; the drainer section, the conveying section and the pressing section.

On municipal applications, faecal breakers provided on the drainage section further cleans the screened

solids by washing organic matter back into the flow. The volume of the screened solids are typically reduced by up to 40 percent resulting in lower transportation and disposal costs. The Suboscreen fine screen system is very robust and suited for continuous and reliable operation.



Solids are lifted out by lifting staves



Drum is cleaned by water or recycled effluent



Integrated DSP for de-watering effluent



FEATURES AND BENEFITS

- Proven, fine screening technology for municipal and industrial applications supported by many references around the world
- Horizontal, semi-submerged design results in higher flow rates compared with inclined screens. Fewer channels and screens are typically required for a given flow
- Choice of Vee-Wire® as screening media results in very high capture efficiency. Vee-Wire is very easily cleaned using sparge water at moderate pressure
- Deep profile Vee-Wire is used to minimise the effect of stapling by stringy fibrous matter. A low and consistent operating head loss, typically less than 8 in. (200 mm) water column is achieved
- The operation of the Suboscreen® is controlled efficiently by differential level, timer or flow
- Vee-Wire slot sizes ranging from 0.04 in. to 0.2 in. (1 mm to 5mm) suited for flow rates ranging from 6340 to 57061 GPM (0.4 to 3.6m³/sec)
- The integrated Drainer Screw Press (DSP) combines washing, dewatering, conveying and compaction in a single unit. In municipal applications, organic matter in the pressed screening is greatly reduced on account of the effective washing system
- 304 and 316 stainless steel construction materials provide ample choice in a wide range of applications
- Suboscreens are offered with covers for safety and to contain aerosols and odour
- Multiple screens can have a common fluming design for compact and economic layout



Multiple WS 175/175 Suboscreens



WS 300/300 Suboscreen for a desalination plant.



WS 120/120 Suboscreen

SUBOSCREEN SELECTION

Suboscreen models	Peak Flow - GPM (m ³ /sec)		Channel Dimensions - ft (mm)		Weight - lb (kg)	Motor rating - hP (kW)
	0.12 in. (3 mm) slot size	0.17 in. (4.5 mm) slot size	Width	Depth		
WS90/90	6340 (0.4)	7925 (0.5)	4.0 (1220)	3.9 (1180)	1763 (800)	0.5 (0.4)
WS120/120	11095 (0.7)	12680 (0.8)	5.0 (1520)	4.9 (1480)	3417 (1550)	2.0 (1.5)
WS150/150	19020 (1.2)	21081 (1.3)	6.2 (1896)	6.1 (1860)	4078 (1850)	2.0 (1.5)
WS175/175	28531 (1.8)	30116 (1.9)	7.0 (2140)	7.2 (2200)	5511 (2500)	3.0 (2.2)
WS200/200	31701 (2.0)	34395 (2.2)	8.0 (2440)	7.9 (2400)	7385 (3350)	3.0 (2.2)
WS200/250	41211 (2.6)	44381 (2.8)	8.0 (2440)	7.9 (2400)	8267 (3750)	3.0 (2.2)
WS250/250	42796 (2.7)	46283 (2.9)	10.0 (3020)	9.5 (2900)	8818 (4000)	4.0 (3.0)
WS250/300	53891 (3.4)	57061 (3.6)	10.0 (3020)	9.5 (2900)	9920 (4500)	4.0 (3.0)

The data contained in this document is for information only and values are typical. Please contact Johnson Screens for confirmation.

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innovation and customer satisfaction.
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Triton Underdrains
Intake Screens
Ultra-Filtration
CoMag

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Custom lighting
Furniture
Wall partitions

GENERAL INDUSTRIAL

Flat panels
Sieve bends
Cylindrical screens
Centrifugal baskets
DSM screens
Trommels
Vibrator screens
Diffuser screens
Pressure screens

MINERAL AND AGGREGATE PROCESSING

Vee Wire centrifuge baskets
Sieve bends, flat panels
P/U modular screening systems
P/U and Wire combination screens
Rubber Screening systems
HDPE pipe, P/U lined pipe
SAG and Ball Mill liners
Rubber Ceramic Wear Liners
Woven Wire and perforated plate Screens

PETROCHEMICAL AND REFINING

Centerpipes
Outer baskets
Scallops
Support grids & beams
Outlet collectors

Laterals
Distributor trays
Nozzle systems
Scale traps

PULP AND PAPER

Screen baskets
Extraction plates
Rotors
Filtrate cleaning
Fiber recovery
Refurbishing services

WATER WELL

Wellcreens (stainless steel & PVC)
Riser pipes
Sand spears
Environmental monitoring screens
Drilling fluid
Nu-Well® rehabilitation chemicals

ON-SITE SERVICES

Installation
Inspection
Repair
Assistance
Supervision

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