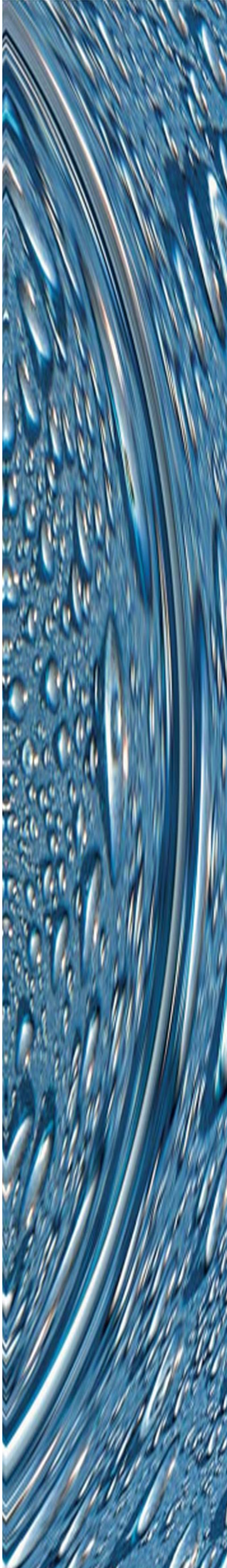
MAIND®

...a first step to clean the water

EMD - Rotary Drum Screens

- *Pre-treatment of Domestic & Municipal Waste Waters*
- *Solids Recovery & Processing from Industrial Effluents*
- *MBR Membrane Bioreactor Inlet Screening*
- *Storm Overflows and Sea Outfalls*

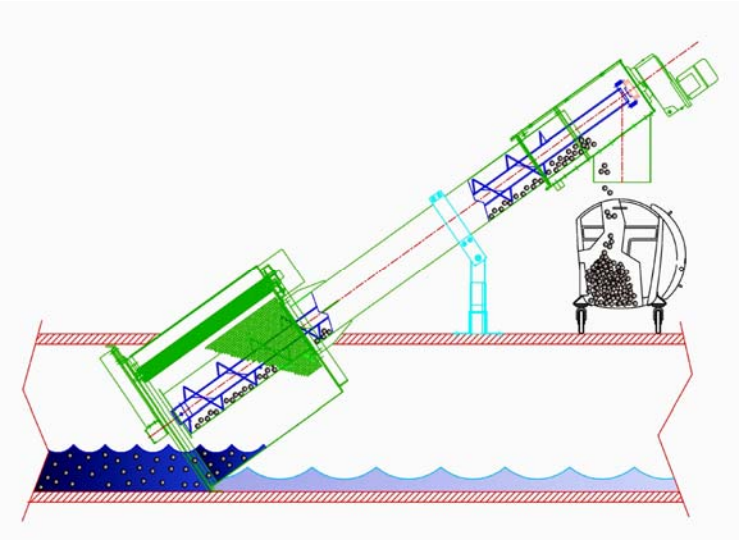


MAIND

With over 4,000 installations worldwide, MAIND has developed a good reputation with a philosophy of offering high quality at low cost. This has served to provide equipment to smaller industries or applications where previously it was considered unviable and offers a lower purchasing cost for larger applications.

EMD Rotary Drum Screens - Operation

EMD Rotary Drum Screens are integrated machines consisting of a screen, a screw conveyor and compactor.



During operation, solids within the incoming flow will enter into the drum screen and progressively collect onto the screen mesh and cause it to gradually blind. The upstream water level will rise and at a predetermined level, the drum screen and screw conveyor will activate and rotate immersing a clean section of the screen into the effluent.

During rotation the solids or screenings will become inverted and then fall into the screw conveyor. Spray nozzles and a roller brush fixed to the periphery of the drum screen will clean away any residual solids from the mesh.

The screenings are conveyed, compacted and dewatered and depending upon the solid properties, a volume reduction of around 40% DS or greater can be achieved prior to disposing the screenings into a skip or wheel bin.

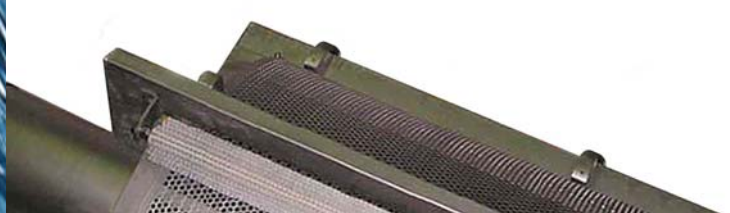
A jet wash facility in the compaction zone will break down and remove faecal and other semi-solid or soluble matter and return it to the inlet flow. Additional jets can be installed in the transport zone to meet higher specifications of organic solids removal. Faecal matter washing efficiencies greater than 90% and screenings weight reduction of 50% can be achieved.

The compactor and wash system can be omitted to suit requirements such as CSO applications where the screenings are returned to the downstream sewer.

EMD Drum Screen fitted with screenings bagging system discharging to a container

EMD drum screens can be supplied for direct installation into a channel or as a complete package inside a stainless-steel tank with or without the option of a bypass rake screen.

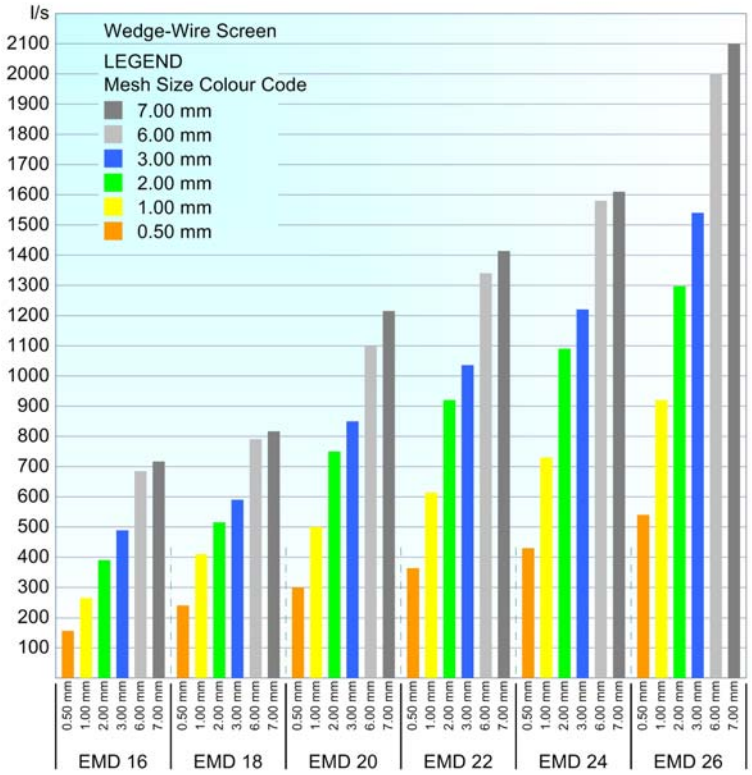
Continuous bagging systems are available to receive screenings and abate odour, the screenings can then be sealed without any personal contact.



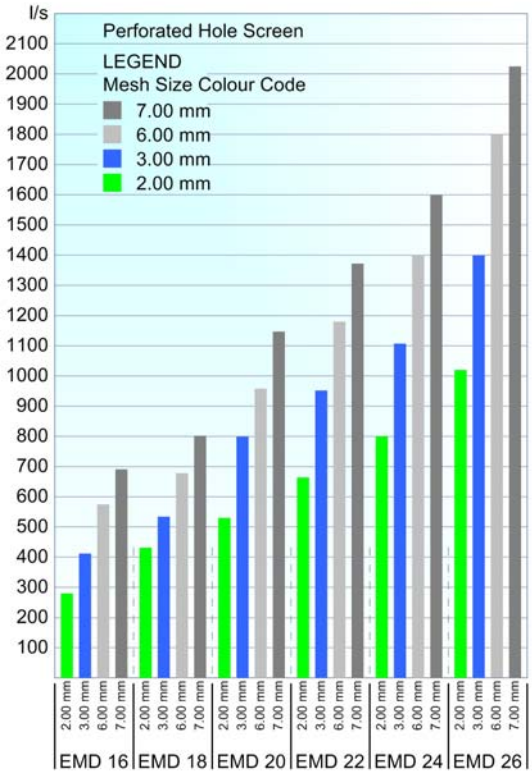
EMD Rotary Drum Screen Selection Charts

EMD Rotary Drum Screens are available in various stainless steel grade mesh sizes in either a wedge-wire profile or perforated hole. Standard size mesh ranges are detailed below - other mesh sizes are available on request.

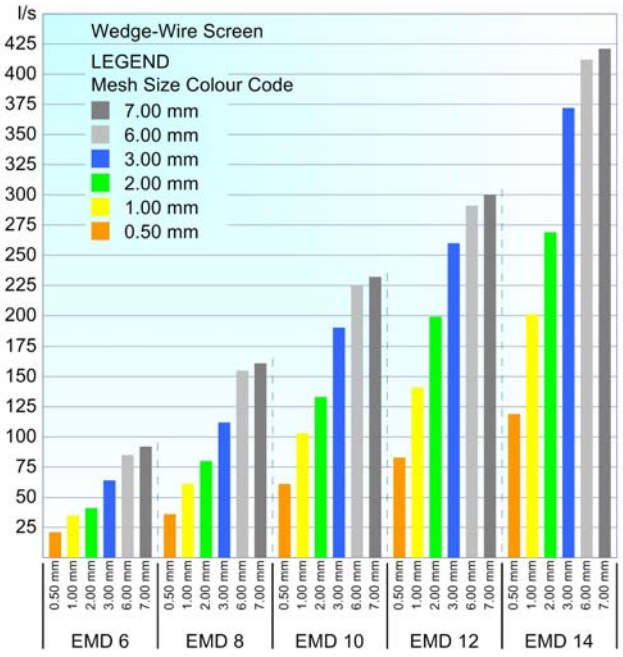
Wedge-Wire Screen Chart (EMD 16 – 26)



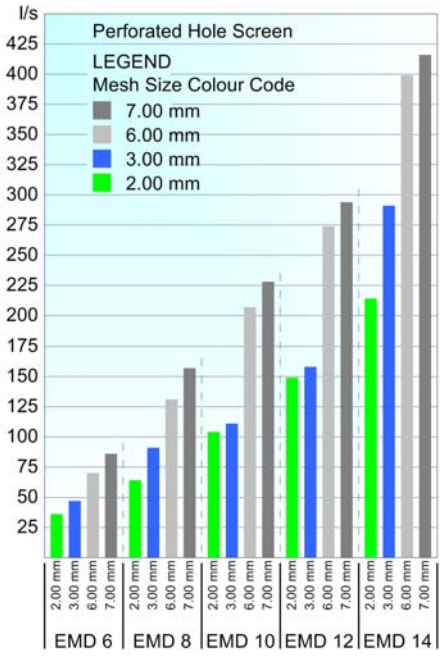
Perforated-Hole Screen Chart (EMD 16 – 26)



Wedge-Wire Screen Chart (EMD 6 – 14)



Perforated-Hole Screen Chart (EMD 6 – 14)



Please note the above Screen Charts are intended to provide an estimate of requirements. Advice should be sought to ensure the screen will be appropriate for the application.

EMD Rotary Drum Screen Applications

Municipal and Industrial Waste Water Treatment

EMD Drum Screens cater for higher flow rates above MAIND MID and MI screens: furthermore, higher separation efficiencies can be anticipated at peak flows.

The rotary drum design ensures separated solids are retained and cannot bypass the screen even at peak flow loading.

MBR (Membrane) Reactor Pre-Treatment

EMD perforated-hole drum screens impart high separation efficiencies using either a 1 or 2 mm mesh respectively for hollow fibre or flat plate membrane processes.

Improved performance efficiencies of MBR operation can also be applied by utilizing 0.5 or 1 mm wedge-wire mesh for enhanced removal of fibre or hair and the possible tangling hindrances this may cause. High separation efficiencies and screenings capture within the enclosed drum ensures solids are retained and cannot pass through or overflow.

Storm Overflow Treatment

EMD Drum Screens can be applied as combined storm overflow (CSO) screens using 6 mm perforated hole mesh for flows up to 2,000 l/s. Increased duties, 4,000 l/s, 6,000 l/s, 8,000 l/s can be handled where multi-duty units are used.

To suit various requirements, EMD Drum Screens can be supplied with or without wash and compaction. This will allow options for:

a) screenings removal and compaction at the CSO station,

b) screenings removal and compaction at the CSO station with return of washed faecal and other semi-solid matter only to the downstream sewer or,

c) return of all screenings, faecal and other semi-solid matter to the downstream sewer.

Applications include combined sewer systems in addition to municipal and industrial waste water treatment works - either as CSO duty only, or as a single integrated CSO and preliminary treatment screen for all effluents entering the works.

All flows entering the screen drum become entirely enclosed which ensures separated solids are retained within the screen and cannot overflow even at peak flow loading.

Package EMD Rotary Drum Screen
With Stainless Steel Tank

Improved storm overflow solids removal efficiencies can be gained with consequential reductions in BOD and COD by utilizing 0.5 or 1 mm wedge-wire mesh.

EMD Rotary Drum Screen Advantages

- **High solids separation**

  Wedge-wire screens ensure high separation efficiencies at high flows while perforated-hole screens obtain increased filtration efficiencies.

- **Enclosed drum screen**

  Ensures separated solids are retained and cannot pass through, bypass or overflow the screen.

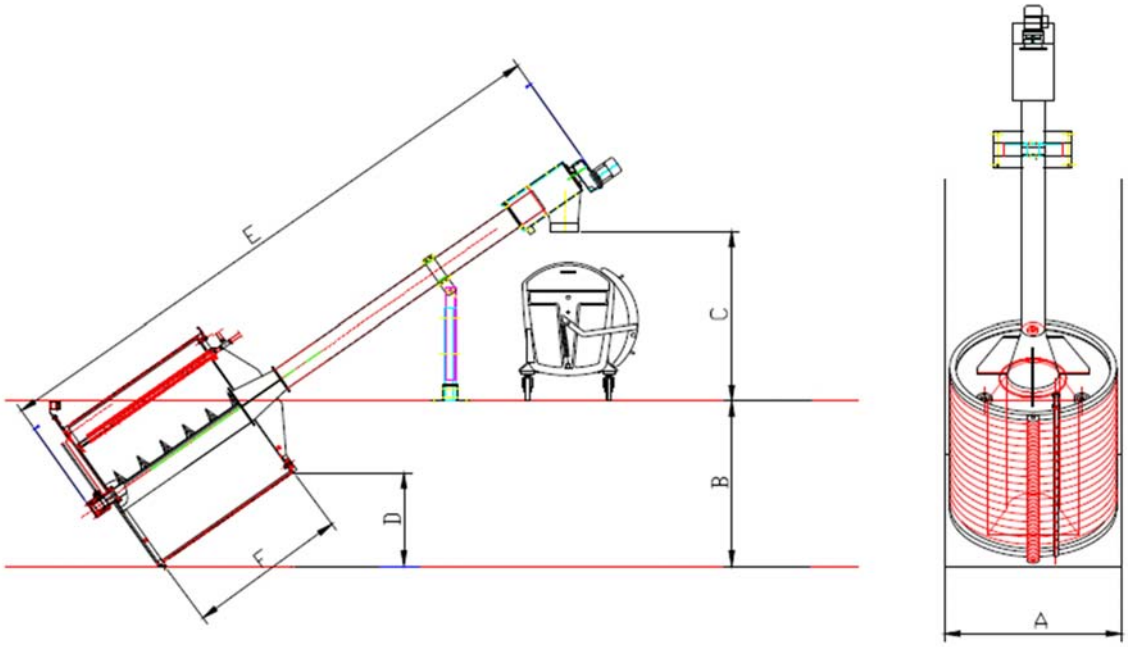
- **Low head loss**

  An inclination angle of 35° and large surface profile imparts increased immersed screening area and exposure to the incoming flow.

- **Low footprint**

  Compact, space-saving design – All-in-one design including screenings removal, washing and compaction requires less space than alternative screen systems – Storm overflow applications permits installation into chambers without level long-weir discharge or unsuited to horizontal CSO screens.

EMD Rotary Screen Dimensions



Model	EMD6	EMD8	EMD10	EMD12	EMD14	EMD16	EMD18	EMD20	EMD22	EMD24	EMD26
A	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
B	800	1000	1200	1400	1600	1900	2100	2400	2600	2800	3100
C	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
D	420	580	770	930	1050	1200	1400	1550	1700	1850	2000
E	5100	5500	5800	6800	7300	7600	8000	8500	9000	9500	10100
F	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600

Membrane Bioreactor (MBR) Pre-Screening

Enhanced performance of MBR operation can be applied by EMD Rotary Drum Screens utilizing 0.5 mm or 1 mm wedge-wire mesh to remove fibre or hair and the consequential tress or entangling hindrances this can cause.

Specifications

Flow Capacities

Up to 2,100 l/s depending upon mesh, effluent and solids contained within the flow

Fabrication

Stainless steel: 304 (BS EN 10088 1.4301)

Stainless steel: 316 (BS EN 10088 1.4401)

Spiral: Mild steel or Stainless steel, 304 or 316

Screen basket nominal diameter availability

600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400 & 2600 mm diameter

Standard screen size availability

0.5, 1, 2 3, 6, & 7 mm in wedge wire

2, 3, 6, & 7 mm perforated holes

The Benefits

- high quality and reliability at low costs
- easy installation
- retrofit capability into existing channels
- stainless steel fabrication
- reduced disposal costs with screenings press
- reliable and automatic self cleaning operation

Typical Applications

- Municipal waste water treatment works
- Industrial effluent discharges
- MBR Membrane pre-screening
- Storm or Sea Outfall discharges
- Process liquor or fluid screening
- Commercial outlet discharges

Other Screen Variants

MI Range Screens; available for channel mount or supplied in stainless steel tank, ≤ 300 l/s

SP Range Screens for high solids content

MID/V Vertical screens for pump station etc, ≤ 300 l/s

TOP Range Screen, Grit & Grease Removal, ≤ 350 l/s

M Range Tanker reception screens with Bauer connection

GSR Range Sludge reception - Rapid tanker emptying

MINYSCREEN probably the smallest low-cost screw screen available on today's market

Other products from MAIND include:

⇒ Sand & Grit Separation, Grit Classifiers

⇒ Screw Compactors

⇒ Screw Conveyors, Horizontal, Inclined or Vertical

⇒ SLUDGLESS Sludge Thickening & Dewatering

⇒ Combined Systems

⇒ Coarse and Fine Screens

Contact MAIND for further information regarding other products or screen variants.

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UNI EN ISO 9001:2000
Quality Certification
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