

Elmosa Offshore Seawater Intake Systems

InvisiHead intake head and outfall diffuser Specifications

SEA WATER INTAKE SYSTEMS
The Offshore Type: Self Operating, Self Maintaining Gravity Flow Passive Intake System

Do you have problems in your intake with:

- Zebra Mussels?
- Fish, Fish Larvae, Sand, Trash and Debris?
- Seagrass?
- Potential Oil Spills?

US EPA: Best Technology Available (BTA)

The InvisiHead[®]

The NatSep[®] Settling Basin

The User:
Electric Power Plant,
Seawater Desalination Plant,
Oil Refinery,
Others.

Our Design Philosophy is based on:

- Pro action rather than Reaction
- Prevention rather than Curing
- Preservation & Exclusion rather than Eradication

We have the permanent and the natural solution.

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The InvisiHead Sea Outfall, flow attains local ambient conditions as soon as it is out – RO Brine or cooling water

800 m

40 m

Concrete (Rebar)

200 kg double pipe ballast weight @ 4 m min spacing

600 m Dia 1800 DR 26 HDPE pipe

The Elmosa Offshore InvisiHead

Technical:

- Intake entrance and outfall exit velocity: 0.091 m/s max.
- Flow controlling mechanism: Potential flow criteria
- Flow pattern: Omni directional, flaring – continuous parabolic solid diffusion
- Flow Domain: 3-D, continuous exponential expansion
- Flow streamline regime: Curved upward – straight – curved downward symmetrical or asymmetrical around central disc as the per the site requirements
- Flow velocity regime: Decelerating away from entrance or exist, asymptotic to horizontal plane, velocity approaches 0 m/s after a short span (5-10 m away)
- Flow velocity profile: almost flat with uniform velocity at the entry or exit line



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Form 0058, spec's

- Pressure distribution: Uniform at the entry or exit line (no eddies, head loss due to friction is negligibly small – 0.017 mm)

Physical:

- 4-phase flow pattern:
 - Approach
 - Stabilization
 - Acceleration
 - Steady state
- Dimensions vary with:
 - Flow capacity
 - Height – to – diameter flow tuning ratios
 - Dimensions of each flow phase
 - Wave height
 - Submarine currents
 - Local site conditions

Mechanical:

- Design approach: proaction
- Design philosophy: exclude, prevent, preserve
- Process: natural
- Flow type: Passive flow
- Flow area: None restricted flow (no screens)
- Operation: Self operating
- Maintenance: Self maintaining
 - No back wash
 - No air purging
 - No manual or mechanical interference
- Chemical dispensing: Built-in anti biofouling (optional)
- Material: Made of high grade stainless steel
- Assembly: Factory assembled or assembles at site
- Fabrication: Mill finished, inside and outside stains removed
- Weight: is a function of size
- Stability: robust heavy duty structure
- Floor anchorage: through built-in support legs.



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