

# Dragheads

## Many years practical experience

*The draghead of a trailing suction hopper dredger represents the first mechanical contact with bottom material, so its design, quality and sturdiness are critical in dredging and alluvial mining tasks. IHC Parts & Services has invested many years of practical experience and testing to create optimal draghead solutions for extracting the maximum of bottom soil at minimum time and cost, and continues to do so.*

### **Optimal dredge efficiency**

While the production of excavated soil is primarily governed by visor width, penetration depth and trailing speed, other factors can also play a role. Draghead design is always seen in close relation to all the other key components of the dredge process. Economic and technical considerations mandate the widest possible draghead consistent with other operational factors. Optimal dredge efficiency at minimal lifetime cost is the key factor in the design challenge.

### **3D solid modeling**

The latest generation Parts & Services dragheads are broadly of two types – the IHC type and the California type. Within this grouping are numerous design variants available adapted to the removal of the many types of bottom soil at minimum cost and wear. Most dragheads today are CAD/CAM designed, and together with 3D solid modeling facilities, speed up response to client needs. These techniques help simulate and thus optimise total mixture flow from bottom to pump.

All dragheads are built to minimise the extraordinary level of wear found in this activity with such features as optimal flow pattern and Weldmax high wear resistance blocks. For further improvement of the dredging process the draghead can be fitted with hydraulically operated equipment for visor adjustment and water admission.

### **Efficient loosening**

The large degree of freedom of visor movement (up to 50°) raises the effectiveness of the suction pipe, and increases production in both shallow and deep water conditions. Jet nozzles and teeth on the draghead ensure the most efficient loosening and fluidising of compact bottom material. This means the full available vacuum produced by the dredge pump can be applied to transport the mixture, and maximum production can be achieved. Water inlet valves ensure the dredge process is highly controllable. Grids reduce the possibility of pump blockages.



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### ***IHC and California types***

The IHC draghead in its simplest form consists of a fixed part connected to the suction pipe and a self-adjusting visor mounted to this fixed part. It is multi-purpose and thus suitable for excavating all soils from silt to compact sand and gravel. The California draghead consists of a fixed part and two independently self-adjusting visors that in principle increase the erosion effect as a result of the extended length of bottom contact. It is most suitable for coarse sand and gravel in the event the trailing force of the dredger is limited.

Standard draghead pipe connection diameters vary from 400 to 1200mm. Customised versions have been built in the range from 300 to 1400mm. The range of options is wide and, with the strengths of 3D modeling and simulation, most client requirements can be met remarkably fast.

### ***Benefits***

- optimal draghead-bottom contact
- effective bottom loosening
- maximum use of vacuum
- minimal resistance to flow
- reduced blockages
- optimally wear protected
- designed for easy maintenance
- rubber seals raise mixture density
- fenders protect ship's hull

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**IHC Parts & Services**

***Keeping dredging  
hardware profitably at work***