The IHC TT-Pump, a compact dredge pump unit, and the IHC Otter, a small dredger utilising the IHC TT-Pump, are completing the portfolio of IHC’s hydraulic dredging equipment.
IHC TT-PUMP UNITS
SUBMERSIBLE DREDGE UNIT FOR MULTI-PURPOSE DREDGING ACTIVITIES

The IHC TT-pump units are a complete range of compact dredge pumps which provide customers with one of the most cost effective solutions to dredge slurry for smaller dredging projects. The dredge pump is mainly used to dredge silt, medium sand and gravel.

**BENEFITS**
- versatile and flexible
- high efficiency
- large sphere passage
- multi-purpose use
- cost effective
- easy to handle, operate and maintain
- wear resistant Maxidur® S.

**OUR SOLUTION TO YOUR PROJECT**
TT-pumps can be operated from excavators, suspended from cranes, or be fitted to small pontoons with hoisting or ladder arrangements.

**HYDRAULIC POWER PACK**
The hydraulic power pack provides power for operation of the TT-pump when attached to an excavator, suspended from a crane or deployed from a pontoon.

**JET WATER**
A separate jet water unit can be supplied for the standard sand production head. The jet water pump is driven directly from the hydraulic power pack.

**CUTTER**
The jet water for the standard sand production head is not always capable of fluidising the material to be dredged. For these situations, a hydraulic cutter unit can be supplied. The rotating cutter head loosens the material which is then picked up by the dredge pump with minimum spillage. The hydraulic cutter unit can only be operated from a boom or an excavator.

**HOSES AND PIPELINES**
Hydraulic hoses, jetting water hoses, and discharge hoses can be supplied when required. Discharge hoses can include rubber hoses, floating hoses and HDPE lines.

**EXCAVATOR ADAPTER**
IHC TT-pumps are supplied standard for suspended wire operations. For operation from an excavator, an adapter unit can be supplied.

**PRODUCTION SENSORS AND AUTOMATION**
For operational and production management, a range of sensors and instruments can be supplied. The output data is displayed via an HMI, and includes flow, density, pump speed, discharge pressure and depth measurement.

**ACCESSORIES**

**TT 15-65**
- Max. pump power: 65kW
- Max. working pressure: 5 bar
- Oil flow at motor: 225l/min
- Oil pressure ΔP at motor: 296 bar
- Capacity: 65m³/h
- Pressure: 8 bar
- Suction diameter: 150mm
- Discharge diameter: 200mm
- Ball passage: 125mm
- Height standard pump: 2,540mm
- Diameter standard pump: 1,600mm
- Height cutter unit: 1,955mm
- Weight: 795kg

**TT 20-95**
- Max. pump power: 44kW
- Max. working pressure: 5 bar
- Oil flow at motor: 105l/min
- Oil pressure ΔP at motor: 280 bar
- Capacity: 70l/min
- Pressure: 8 bar
- Suction diameter: 150mm
- Discharge diameter: 200mm
- Ball passage: 125mm
- Height standard pump: 2,060mm
- Diameter standard pump: 1,450mm
- Height cutter unit: 1,825mm
- Weight: 1,160kg

**TT 24-150**
- Max. pump power: 25kW
- Max. working pressure: 5 bar
- Oil flow at motor: 70l/min
- Oil pressure ΔP at motor: 240 bar
- Capacity: 1,220mm
- Pressure: 8 bar
- Suction diameter: 150mm
- Discharge diameter: 200mm
- Ball passage: 125mm
- Height standard pump: 1,675mm
- Diameter standard pump: 1,050mm
- Height cutter unit: 1,450mm
- Weight: 890kg

**TT 30-250**
- Max. pump power: 21kW
- Max. working pressure: 5 bar
- Oil flow at motor: 51l/min
- Oil pressure ΔP at motor: 280 bar
- Capacity: 1,790mm
- Pressure: 8 bar
- Suction diameter: 150mm
- Discharge diameter: 250mm
- Ball passage: 125mm
- Height standard pump: 1,740mm
- Diameter standard pump: 1,250mm
- Height cutter unit: 1,400mm
- Weight: 1,370kg

**TT 35-375**
- Max. pump power: 13kW
- Max. working pressure: 5 bar
- Oil flow at motor: 42l/min
- Oil pressure ΔP at motor: 205 bar
- Capacity: 2,400mm
- Pressure: 8 bar
- Suction diameter: 150mm
- Discharge diameter: 250mm
- Ball passage: 125mm
- Height standard pump: 2,050mm
- Diameter standard pump: 1,300mm
- Height cutter unit: 1,350mm
- Weight: 1,150kg
**IHC OTTER**

**DREDGERS UTILISING THE SUBMERSIBLE IHC TT-PUMP**

The IHC Otter is a range of compact dredgers serving as a platform for deploying the submersible IHC TT-Pump, which provides customers with a compact, cost-effective solution to dredging tasks, particularly for smaller dredging projects.

The IHC Otter is easily used to dredge silt, medium fine sand and gravel and combines the advantages of the IHC TT-Pump and offers a single dredging solution.

**KEY FEATURES**

- Compact size allowing easy access in confined working areas
- Modular and easy to transport
- Lift-on/off vertical deployment
- Non-standard vertical deployment utilises an outward design, with a modular option also available
- Invariable design for easy transportation by road, rail or ship
- Vertical deployment allows for dredging at depths of up to 50 meters
- Low capital cost making it a versatile option for dredging operations with a limited budget
- The IHC Otter is designed for the harsh conditions encountered in remote locations.

**EASY MAINTENANCE**

The design is based on the principles of production maximisation and reliability, and its cost-effective design reduces the need for specialised maintenance personnel.

**MODULAR AND EASY TO TRANSPORT**

The IHC Otter is constructed from a set of standard modular components that can be used to suit the complete range of IHC TT-Pumps. The components are designed to fit into standard and 12x shipping containers for easy transportation.

**SUBMERSIBLE IHC TT-PUMP**

DREDGERS UTILISING THE IHC OTTER

IHC TT-Pump features an easy operation for agitating material during dredging operations.

**BOOSTER STATIONS**

Adding extra pumping power can significantly increase production levels when pumping over longer distances. It can also be achieved by using a booster station, which provides a separate additional pump placed along the discharge line.

**OPTIONS**

Service and optional packages can be provided in a comprehensive list of spare parts, operational and maintenance training, and support to suit the needs of customers, as well as a wide range of optional packages such as HSE, production, positioning etc., to enhance the IHC Otter. Customisation of the IHC Otter can also be requested in order to meet specific project requirements.

**SPECIFICATIONS**

**IHC OTTER - VERTICAL DEPLOYMENT**

**IHC OTTER - HORIZONTAL DEPLOYMENT**

**RIGGING**

**DIMENSIONS**

<table>
<thead>
<tr>
<th>IHC OTTER</th>
<th>VERTICAL DEPLOYMENT</th>
<th>HORIZONTAL DEPLOYMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TT-Pump</strong></td>
<td><strong>TT 20-95</strong></td>
<td><strong>TT 24-150</strong></td>
</tr>
<tr>
<td><strong>Discharge pipe diameter</strong></td>
<td>200mm (8&quot;)</td>
<td>200mm (8&quot;)</td>
</tr>
<tr>
<td><strong>Max. pump power</strong></td>
<td>95kW</td>
<td>150kW</td>
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<tr>
<td><strong>Max. working pressure</strong></td>
<td>5 bar</td>
<td>5 bar</td>
</tr>
<tr>
<td><strong>Max. line speed</strong></td>
<td>12m/min</td>
<td>12m/min</td>
</tr>
<tr>
<td><strong>Line pull, first layer</strong></td>
<td>30kN</td>
<td>30kN</td>
</tr>
</tbody>
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**RIGGING**

**DIMENSIONS**

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<tbody>
<tr>
<td><strong>TT-Pump</strong></td>
<td><strong>TT 30-250</strong></td>
<td><strong>TT 35-375</strong></td>
</tr>
<tr>
<td><strong>Discharge pipe diameter</strong></td>
<td>250mm (10&quot;)</td>
<td>300mm (12&quot;)</td>
</tr>
<tr>
<td><strong>Max. pump power</strong></td>
<td>250kW</td>
<td>375kW</td>
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<tr>
<td><strong>Max. working pressure</strong></td>
<td>5 bar</td>
<td>5 bar</td>
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</table>
THE SOIL TYPES AS INDICATED IN THE PRODUCTION GRAPHS ARE DEFINED AS FOLLOWS:

<table>
<thead>
<tr>
<th>SOIL TYPE</th>
<th>GRAIN SIZE</th>
<th>DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silt + 50% fine sand</td>
<td>0.059mm</td>
<td>1,600kg/m³</td>
</tr>
<tr>
<td>Medium fine sand</td>
<td>0.236mm</td>
<td>1,950kg/m³</td>
</tr>
<tr>
<td>Gravel</td>
<td>7.276mm</td>
<td>2,200kg/m³</td>
</tr>
</tbody>
</table>

Dredging depth 10m
Geodetic head 4m

WHICH TT-PUMP IS RIGHT FOR YOUR PROJECT?

The graphs below show the performance of the IHC TT-pump units and IHC Otters. The output is expressed in cubic meters of in-situ solids per effective pump hour, with a maximum volume concentration of 25%, plotted against the discharge length per TT-pump unit type. Depending on the required output these graphs can help in choosing the right TT-pump for the job at hand.

SILT AND 50% FINE SAND

TT 35-65
TT 20-95
TT 24-150
TT 30-250
TT 35-375

MEDIUM FINE SAND

TT 15-65
TT 20-95
TT 24-150
TT 30-250
TT 35-375

GRAVEL

TT 15-65
TT 20-95
TT 24-150
TT 30-250
TT 35-375

IHC TT-PUMP AND IHC OTTER PROJECT APPLICATIONS

The IHC TT-Pump and the IHC Otter, deploying the TT-Pump, are applicable to many small scale dredging activities due to their compact size and easy transportability. Their size and maneuverability allows easy access in for instance, confined waterways and alongside quay walls. Their main applications are:

MAINTENANCE DREDGING
- environmental dredging
- (inland waterways (rivers, canals/waterways, ports/ harbours)
- reservoir dredging or power plant maintenance.

MINING
- construction or heavy mineral sand mining
- alluvial gold or diamond mining
- oil sands mining
- tailings.

IHC TT-PUMP AND IHC OTTER
PROJECT APPLICATIONS