



# Beaver<sup>®</sup> 45E cutter suction dredger

The Beaver<sup>®</sup> 45E is a fully electrically powered version of the standard Beaver<sup>®</sup>. With zero emissions and limited noise disturbance, the Beaver<sup>®</sup> E fully complies with the latest environmental regulations and is therefore also suitable to work in the most sensitive environments.

In comparison to conventional diesel powered dredgers, the electrically powered dredger is more energy efficient. The dredger is ready to go instantly, because the electrical dredge pump drive delivers its full power immediately and doesn't require pre-heating. The electrical dredge pump drive also requires less maintenance.

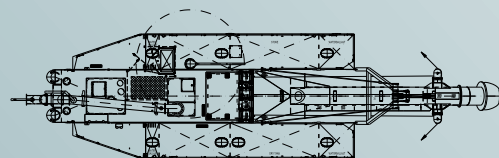
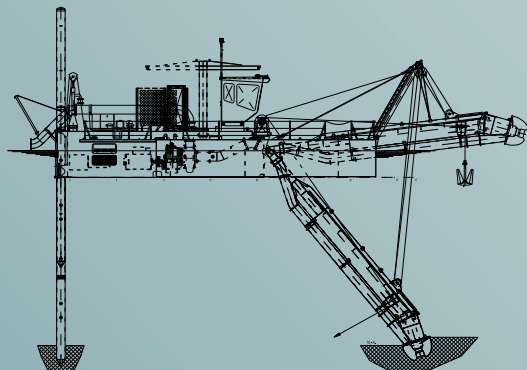
Sticking to the heart of the Beaver<sup>®</sup>: a highly efficient and straightforward dredger, technical changes have been kept to a minimum. The Beaver<sup>®</sup> E is suitable for all common dredging projects, such as land reclamation, maintenance dredging and aggregates dredging. All current standard Beavers<sup>®</sup> types are available in an electrical version.

The Beaver<sup>®</sup> 45E is reliable, efficient and has low maintenance costs. This robust and highly productive dredger is equipped with state-of-the-art technology, including the following key features:

- low cost per cubic metre
- an exceptional rate of pumping power
- first class ergonomics and diagnostics
- Cutter Special<sup>®</sup> pump that combines high efficiency and a large ball passage to provide a high level of availability
- class certification (BV Coastal area)
- low maintenance and efficient power consumption
- environmentally friendly solutions
- enhanced safety features
- dismantlable for transport via road, rail or sea.

## Uncover the potential

Whatever the challenge, at IHC Dredging we support you to find the optimal solution. Offering a wide range of dedicated vessels, equipment and services, we improve efficiency across your entire operation and work together towards a more sustainable performance.



## Main parameters

Dredging depth	10.0m (larger depth optional)
Discharge diameter	450mm (larger diameters optional)
Total power	1,250kVA

### Dimensions

Length overall (ladder raised), approx.	26.60m
Length over pontoons	16.96m
Breadth	6.99m
Depth	2.01m
Mean draught with full bunkers	1.40m
Maximum standard dredging depth	10.0m
Suction pipe diameter	450mm
Discharge pipe diameter	450mm
Total installed power	1,092kW

### Swing width with 35° swing each side

At maximum dredging depth	23.5m
At minimum dredging depth	29.0m

### Dredge pump

Type	IHC HRCS2 108-23-45, single-walled
Pump power	764kW

### Electrical installation

Power supply	3x 10kVac
Power	1,250kVA
Voltage	690Vac / 230Vac / 24V DC
Battery capacity	220Ah

### Cutter

Type	IHC Lancelot 1330-120-10CB
Power at shaft	110kW
Diameter	1,330mm
Maximum speed, approx.	34rpm

### Ladder and Swing winches

Line pull, first layer	57kN
Maximum line speed	25m/min
Wire diameter	18mm
Drum diameter	390mm
Swing wires length	100m
Anchor weight	360kg

### Spuds

Length	13.85m
Diameter	457mm
Weight	2,260kg

### Spud hoisting cylinders

Force	100kN
Spud stroke (each time), approx.	3.5m

### Deck crane

Lifting power	20kN
Outreach	2.80m

### Other features

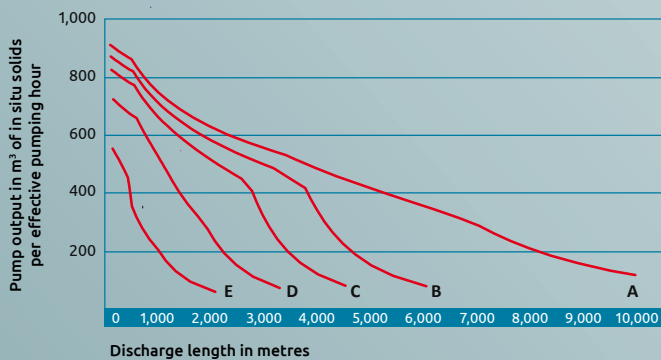
- spare parts available from stock
- dredge pump driven through integrated bearing block, clutch and reduction gearbox
- white iron-wear parts for the dredge pump
- cutter drive accepts temporary overload, resulting in high maximum cutter power
- reliable hydraulic system
- completely assembled and fully tested afloat before delivery
- ready for operation on arrival at site
- one-man operation
- wide range of services and auxiliary equipment available (including work boats, boosters and pipelines)
- access to operations monitoring module (3 years with option to extend).

### Optional extras

- spud-carriage installation
- anchor booms
- swivel bend
- non-return valve and vacuum-relieve valve
- production measurement, automation and positioning system
- increased discharge pipeline diameter
- increased dredging depth
- life-cycle support packages (incl. training, technical support etc.)
- optional packages: comfort (incl. air conditioning), HSE (health, safety and environment), nautical and inventory plus.

### Pump output

Discharge pipe diameter = 450mm  
Dredging depth = 10.0m  
Maximum volumetric concentration of in situ solids of 25%  
Final elevation at end of discharge pipe = 4.0m



Output calculated for:

Soil type	Decisive grain size	Situ density
A Fine sand	100µm	1,900kg/m <sup>3</sup>
B Medium sand	235µm	1,950kg/m <sup>3</sup>
C Coarse sand	440µm	2,000kg/m <sup>3</sup>
D Coarse sand and gravel	1.3mm	2,100kg/m <sup>3</sup>
E Gravel	7mm	2,200kg/m <sup>3</sup>

### Note

Calculated output curves only indicate pumping capacity, based on the maximum available power on the pump shaft and free-flowing material. In actual practice, properties may vary from free-flowing, easily excavated to compacted, hard-to-excavate material. When used for estimation actual outputs, the nature of the material to be dredged and local job conditions must be considered. Please consult IHC Dredging for dredging conditions outside these curves.