

# SPARTACUS

BREAKING  
BOUNDARIES





# Breaking boundaries

Spartacus is the world's most powerful cutter suction dredger. Designed to cut through the hardest rock, with unrivalled production rates and pumping power, Spartacus unlocks new areas of opportunity. The vessel represents the pinnacle of more than 140 years of dredging expertise. This is pure power with a soft spot for the environment.

This is **SPARTACUS**.

Spartacus was designed with three main priorities at its core: pushing the boundaries of dredging potential, unprecedented autonomy and minimising the impact on the environment.

## SPARTACUS IN NUMBERS

TOTAL INSTALLED POWER  
**44,180** kW

DREDGING DEPTH  
**-45** m

MAXIMUM DRAUGHT  
**6.3** up to **7** m

LENGTH  
**164** m

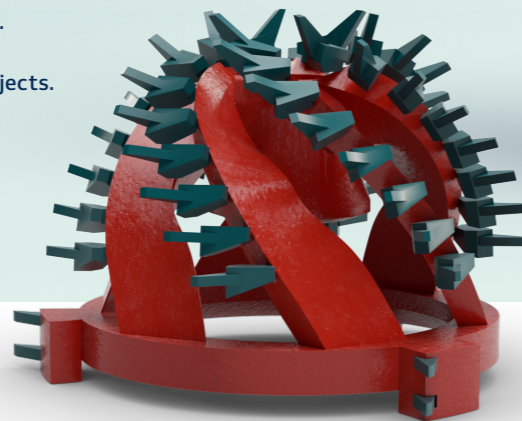
BREADTH  
**34** m





# Proceed with power

Spartacus boasts unseen power levels, with a total installed capacity of 44,180 kW. This force gives Spartacus unbeatable production rates and its ability to cut hard soil is unrivalled. Projects that would not have been feasible before are now possible. Spartacus turns ambitious plans into realistic projects. With no exaggeration – the vessel is a game changer.



## 1 A LADDER WITH HEAVYWEIGHT CAPABILITIES

The more its ladder weighs, the more pressure a cutter suction dredger can apply. **With a cutter ladder weighing a staggering 2,550 tonnes, Spartacus can dredge in depths of up to 45 metres and delivers superior uptime thanks to its resistance to vibrations.**

## 2 NEW GENERATION CUTTER DRIVE

To make sure Spartacus can power the new cutterheads and heavyweight ladder, **it can deliver an unprecedented power of 12,000 kW on the cutterhead. This is double the power of the current generation** of mega cutter suction dredgers. The gearbox converting this power is the largest ever built.

## 3 EXTREME PUMPING POWER

Immense dredging power brings a huge amount of dredged materials. However, unloading materials through a booster station severely limits any cutter suction dredger's autonomy. Not so with Spartacus as **we have increased the vessel's pumping power to 25.5 MW. Spartacus can operate autonomously and discharge dredged materials over more than 10 km.**

## CUTTERHEADS FOR EVERY CHALLENGE

Inspired by DEME's drive for innovation, our partner that specialises in pioneering cutterheads developed a completely new, more effective cutterteeth system.

Spartacus has 14 cutterheads of 6 distinctly different designs that cover each soil type from fine sand to hard rock, meaning she always has the perfect tool for each soil type.



# Step aboard Spartacus

It is not all about power. Spartacus has many smart innovations on board, all of which make the vessel more capable, more efficient and more environmentally friendly.

## SPUDS

With 72 metre long spuds, Spartacus can reach unprecedented depths of up to 45 metres, when the industry standard is only 35 metres. The working spud is held in DEME's patented flexible spud carrier which enables dredging in rough weather and challenging seas.

## ON BOARD WORKSHOP

The on board workshop with a vibration-insulated floor makes it possible to carry out maintenance and repair of the cutterheads during operations. A major advantage to achieve unrivalled uptime.

## ACCOMMODATION

To provide extra comfort for our crews, the modern accommodation block, with a capacity for 72 people, is supported by air cushions.

## CUTTERHEAD

Spartacus has 14 cutterheads of 6 distinctly different designs that cover each soil type from fine sand to hard rock.



## TRIPLE FUEL

This is the first cutter suction dredger in the world that can be powered by either LNG, Low Sulphur Heavy Fuel Oil or Marine Diesel.

## CUTTER DRIVE

At almost double the weight compared to our previous flagship, the cutter drive delivers the necessary power (12,000 kW) to break new ground.



# Unrivalled uptime

We know that every break in production costs time and money. Which is why we designed Spartacus to keep going. And going. Raw power means nothing without the durability to match.

## BUILT TO LAST

- Smart cutter ladder design focused on strength and material fatigue
- Vibration damper to absorb torsional vibrations of the cutter shaft
- Robust cutter gearbox design and smart cutter clutches
- Remote monitoring of critical equipment parameters to allow condition-based maintenance

## SUPPORTING SPARTACUS

Such a mega cutter also needs the support of supersized barges. DEME has invested in two giant 3,500 m<sup>3</sup> split barges 'Bengel' and 'Deugniet' to work alongside Spartacus and other large cutters and backhoes.

## THOROUGHLY TESTED. GUARANTEEING PERFORMANCE.

There has never been a vessel whose dredging and engine room systems have been so extensively tested. A vessel of this size and complexity poses many design challenges. The only way to make such a vessel functional and performant is to test, analyse, improve and test again.





# Fair play to people and the environment

Spartacus is one of the most powerful dredgers the world will ever see. Yet, looking beyond its power and ability to cut through the hardest materials, there is a soft spot for both people and the environment.

## SAFETY BY DESIGN

Spartacus is an exceptional vessel and naturally she has an exceptional crew. Their safety and comfort has been the single most important priority since day one. DEME raised the safety standards well beyond international requirements by analysing, documenting and preparing every single operation on board. Throughout this safety by design process, potential hazards were consistently eliminated, while efficiency and ergonomic gains were integrated throughout.

## HIGHEST STANDARDS OF CREW COMFORT

During operations, the vibrations of a typical cutter suction dredger can make life on board quite a challenge. But crew comfort aboard Spartacus has been taken to another level. By installing giant air cushions underneath the accommodation, DEME has reduced vibrations by an impressive 80%.



## EMBODYING DEME'S COMMITMENT TO SUSTAINABILITY

Making all of our operations environmentally-friendly and becoming climate neutral by 2050 is one of DEME's most important strategic priorities. In line with this ambition, our fleet investment strategy is taking a two-pronged approach to making sure we can achieve this goal. Firstly, we are investing heavily in fuel saving technologies and ways to do more with less fuel, and secondly, we are investing in the use of future fuels, with very low or zero greenhouse gas emissions.

## TRIPLE FUEL FLEXIBILITY

All 6 engines can run on almost all fuels available today including LNG and biodiesel.

## WASTE-ENERGY RECOVERY

Spartacus is designed to use energy as efficiently as possible. The air conditioning can be powered by cold recovery from LNG, while the heat from the main engine is converted into electrical power through a dedicated steam turbine.



