DAMEN CUTTER SUCTION DREDGERS
Decades of dredging and shipbuilding knowledge have come together in a product series: the Damen Cutter Suction Dredgers (CSD). These dredgers offer a reliable operation at the lowest cost per cubic metre of dredged material - because for us that’s what it’s all about.

It’s been our design strategy from the start and what drives the continuous development of our products. It’s what motivates the repair, maintenance and training services we provide. It’s what stimulates us to always offer you the solution best able to tackle your challenges.
Dutch Heritage

The Dutch and the Water

Damen Dredging Equipment, based in Nijkerk, the Netherlands, has been in the dredging business for more than 80 years. Over the decades, it has established itself as a highly efficient production facility, but also as a dedicated dredging knowledge centre.

The Dredging Experience

In Nijkerk, visitors can take a tour through The Dredging Experience, an interactive means of familiarisation with the basic principles of the dredging process.

With 33% of the Netherlands below sea level, the Dutch have centuries of experience in water management. Over the years, the inhabitants of the country have reclaimed significant portions of land from the sea and inland lakes. Damen takes pride in keeping this Dutch heritage alive with its quality dredging products, services and shared knowledge.

Land below sea level
Land between 0 and 7 metres above sea level

A Piece of History

Damen Dredging Equipment, based in Nijkerk, the Netherlands, has been in the dredging business for more than 80 years. It not only serves as a highly efficient production facility, but also as a dedicated dredging knowledge centre. A piece of history, in 1950. This was one of the first cutter suction dredgers to be built in Nijkerk.
SUSTAINABILITY
RESHAPE THE WORLD WITH MINIMAL IMPACT

Damen is committed to the continuous improvement of the safety, health and welfare of all people working under our sphere of influence. We are aware that the products we make have the potential to impact the environment. Therefore, we strive towards optimised working practices to ensure this is minimised. We also aim to deliver products with a long lifespan and high quality to enable the sustainability of our clients’ business models.

SAFETY
SAFETY IS ALWAYS OUR FIRST PRIORITY

The welfare of the people working for us and with us is paramount – it comes before all other objectives. Being a family-owned company, we obligate ourselves to achieve an incident-free workplace. Every day. Everywhere. We comply with and, where practical, exceed our legal duties concerning health and safety. We maintain effective health and safety management plans – these are crucial in preventing injury and ill health.

A SELECTION OF OUR INITIATIVES

Latest engines according to IMO regulations: fuel efficient and minimum NOx / CO2 emissions.

Damen has developed a unique dredge pump cover - the patented Dynacover. Made of strong, light Dyneema fibres, the Dynacover can be zipped effortlessly around any pump to provide protection.

Optimal working environment: The control cabin is well protected from noise, being mounted on vibration dampers and featuring double glazing, and insulated paneling. To create the optimal working environment, the cabin is equipped with a heating and air-conditioning unit and windows are tinted to protect against Sun reflection.

Dredgers are prepared for the installation of an SCR-system meeting IMO Tier III requirements.

The equipment used on our dredgers makes no provision is required for lubrication. For example, the dredge pump shaft sealing is done via a mechanical seal arrangement.

The non-radioactive concentration meter: Damen is making use of a proven, optional system to measure mixture density with a non-radioactive sensor. This meter is combined with a velocity meter. The combination gives a very accurate report of the dredger’s performance.

For example, the dredge pump shaft sealing is done via a mechanical seal arrangement.
Damen has delivered over 250 CSDs worldwide. This success has made our dredger an industry standard. More importantly, it gives you confidence in its performance capabilities in a wide range of operational and environmental conditions, ranging from arctic to desert climate.
A PRODUCT THAT LASTS

We know that minimizing downtime and maintenance costs is essential for your business. Therefore, Damen has designed a CSD series that is robust on all fronts, providing you with a product that lasts and that offers a high resale value.

Furthermore, the easy maintainability and worldwide availability of inevitable wear parts contributes to the lowest production-downtime ratio in the industry.
The CSD is suitable for the maintenance of ports, channels or water reservoirs, sand winning for building projects or land reclamation as well as the removal of polluted soils.

**CAPITAL DREDGING**
Creating new civil works, such as harbour basins, canals or new land, by means of dredging in virgin soil.

**ENVIRONMENTAL DREDGING**
Removing polluted sediments from rivers, harbour basins etc. that may cause a hazard to public health and ecosystems.

**AGGREGATE DREDGING**
Dredging in order to extract minerals with an economic value from underwater deposits.

**MAINTENANCE DREDGING**
The periodic removal of shoals or sediments from existing navigational channels, rivers, ports, lakes, hydro-power reservoirs etc. in order to maintain a safe water depth for navigation, construction, or operational purposes.

**WHATEVER THE JOB...**
The design is such that, with the help of suitable cranes and crew, the dredger is assembled in just a few days. All electrical connections feature sockets and all bolt connections are easy reachable.

**... WHEREVER IN THE WORLD**
Damen Cutter Suction Dredgers, as part of the standardised Damen product portfolio, carry with them the benefits of series production. Amongst these are speed of delivery, use of proven technology, ease of maintenance and competitive pricing.

**STANDARDISED EXCELLENCE**

*Damen’s BackBone - Research & Development*

The Damen CSDs benefit from thorough R&D from their initial design, right through their entire lifecycle. Our team is continuously improving our dredgers, making them more cost-efficient, maintenance friendly and environmentally sustainable.

Damen’s close cooperation with world-renowned research institutes like Delft University of Technology (TU Delft), Maritime Research Institute Netherlands (MARIN) and the Netherlands Organisation of Applied Scientific Research (TNO), as well as other reputable universities and leading maritime and dredging companies, contributes to this product development.

**ADVANTAGES OF STANDARDISATION**

- Fast response to customer requests
- Consistent quality
- Short delivery time due to stock hulls
- Reliability (proven technology)
- Competitive product descriptions
- Interchangeability of ships, crews and spares
- Lower maintenance costs
- Standardised performance
- Better/cheaper for the industry
- Significant savings

**STANDARDISATION ENSURES SHORT DELIVERY TIME**

The delivery time of a standardised Damen vessel is considerably shorter than a conventionally built vessel, due to years of refining the engineering, supply chain and hull fabrication process.

**DREDGE PUMP DESIGN**

Damen designs its own extensive range of dredge pumps. The range includes low, medium and high pressure dredge pumps focusing on maximum efficiency and minimal wear.

**REMOTE ACCESS BY DAMEN DIGITAL**

All Damen dredgers are equipped with a Damen Digital remote access connection. In this way Damen and you are able to view dredge data and perform trouble-shooting from a distance, saving costs and operation time.

**MEET SANDY**

Dredgefinder.com is an online tool to aid contractors in choosing the right CSD and additional equipment for tender submissions. The results provide valuable production information and give insight into the potential efficiency gain of selected options.

**VISIT**

**WWW.DREDGEFINDER.COM**
Damen Cutter Suction Dredgers are of the highest possible quality, ensuring a long lifetime with a minimum of maintenance. Partially this is due to our selection of the best components for the job and partially due to our optimised construction process, which is undertaken at our dedicated production location in the Netherlands.

A CLEAN AND ORGANISED PRODUCTION

A DREDGING INSTITUTE

Here, the complete design, operational support and building is carried out. Performing the comprehensive process in one location guarantees short lines of communication. The results in continual product development and smooth, efficient building. The location is modern, clean and logistically well-situated.

ONLY THE BEST PARTNERS

Damen selects only the best industrial partners for the supply of dredger subsystems. For example, cabins are produced by a market leader in the fabrication of industrial cabins.
The Damen Cutter Suction Dredger Design in Detail

The CSD features an efficient and robust design, combining high-quality production with easy assembly and low maintenance.

**Power Plant**

The powerful Caterpillar main engine is used to drive the dredge pump. The CSD450 and larger models have an additional engine to drive auxiliary equipment, ensuring an optimal dredging process.

**Pontoon**

Heavy-duty coupling system enables rapid dismantling and re-assembly on land or afloat.

**Storage Area**

With the exception of the CSD250, one of the side pontoons of each CSD-type is equipped with storage racks for spare parts and other utensils.

**Cutter Head**

All dredgers are equipped with a powerful cutter, upon which the cutter teeth can be easily replaced.

**Cutter Ladder**

The cutter ladder is made of a heavy-gauge steel pipe and provides stability for the necessary headroom and overhang. It is also designed to minimize the risk of cutting the ladder during dredging services.

**Winches**

The Damen-designed side winches are equipped with a hydraulic brake valve, making them fine-able and adjustable by the operator.

**Operating Cabin**

The spacious operating cabin provides an excellent view on essential deck equipment. The well-insulated cabin is mounted on shock absorbers for improved comfort and low noise levels.

**Controls**

Thanks to sophisticated dredging instrumentation and automation, each CSD can be operated by a single person from the wheelhouse.

**Flap delta®**

Superior high-holding power anchor with its easy handling and rapid penetration in different soil types.

**Spudpoles**

Spuds are hoisted and lowered by hydraulic cylinders, controlled from the operating cabin. Manual lowering is also possible.

**Dredge Pump**

Damen’s in-house developed dredge pumps are equipped with a mechanical shaft seal and feature a large spherical passage, minimizing the risk of pump blockage and therefore reducing maintenance.

**Deme_DX**

With the exception of the CSD250, one of the side pontoons of each CSD-type is equipped with storage racks for spare parts and other utensils.
CSD STANDARD SERIES

The Damen standard range consists of five types of dredger. The standard design and continuous building process have resulted in a short delivery times and competitive pricing. All Cutter Suction Dredgers are completely assembled and fully tested at the yard before delivery, and thus immediately ready for operation on arrival at site.

### PRINCIPAL DIMENSIONS

<table>
<thead>
<tr>
<th></th>
<th>CSD250</th>
<th>CSD350</th>
<th>CSD450</th>
<th>CSD500</th>
<th>DCSD500</th>
<th>CSD650 - 18 m</th>
<th>CSD650 - 25 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH O.A. (INCL. LADDER &amp; SPUDKEEPERS)</td>
<td>19.00 m</td>
<td>26.00 m</td>
<td>33.15 m</td>
<td>38.50 m</td>
<td>46.00 m</td>
<td>61.20 m</td>
<td>70.00 m</td>
</tr>
<tr>
<td>LENGTH OVER PONTOONS</td>
<td>11.50 m</td>
<td>16.50 m</td>
<td>22.50 m</td>
<td>25.50 m</td>
<td>28.50 m</td>
<td>49.30 m</td>
<td>58.80 m</td>
</tr>
<tr>
<td>BEAM O.A.</td>
<td>4.20 m</td>
<td>6.00 m</td>
<td>6.95 m</td>
<td>7.95 m</td>
<td>9.00 m</td>
<td>10.50 m</td>
<td>10.50 m</td>
</tr>
<tr>
<td>DEPTH</td>
<td>1.50 m</td>
<td>1.50 m</td>
<td>1.80 m</td>
<td>2.00 m</td>
<td>2.00 m</td>
<td>2.78 m</td>
<td>2.78 m</td>
</tr>
<tr>
<td>DRAUGHT (BUNKERS FULL, APPROX)</td>
<td>0.90 m</td>
<td>0.80 m</td>
<td>1.05 m</td>
<td>1.30 m</td>
<td>1.45 m</td>
<td>1.65 m</td>
<td>1.65 m</td>
</tr>
<tr>
<td>AIR DRAUGHT (SPUD REMOVED, LADDER UP)</td>
<td>4.00 m</td>
<td>4.70 m</td>
<td>6.40 m</td>
<td>6.40 m</td>
<td>8.40 m</td>
<td>8.80 m</td>
<td>8.40 m</td>
</tr>
</tbody>
</table>

### DREDGING FEATURES

| MIN/MAX DREDGING DEPTH (LADDER ANGLE 3°/45°) | 1/6 m  | 1/9 m  | 1.5/12 m | 2.5/14 m | 5/25 m  | 3/18 m       | 5/25 m        |
| DREDGING WIDTH (40° SWING ANGLE/MAX DEPTH) | 20 m   | 27 m   | 34 m     | 40 m     | 44 m    | 63 m         | 71 m          |
| MAXIMUM MIXTURE CAPACITY | 1,000 m³/h | 2,000 m³/h | 3,000 m³/h | 4,000 m³/h | 4,000 m³/h | 7,000 m³/h   | 7,000 m³/h    |
| DREDGING INSTALLATION | CUTTER TYPE | BP2525MD | BP3530MD | BP45-1100 | BP5045 | BP6560MD | BP6560LD / BP6560MD |
| SUCTION/DISCHARGE INTERNAL PIPE DIAMETER | 250 mm | 350 mm | 450 mm | 550 mm | 550 mm | 550 mm | 550 mm |
| CUTTER POWER | 40 kW | 55 kW | 110 kW | 180 kW | 110 kW | 700 kW | 700 kW |
| ENGINE INSTALLATION | TOTAL INSTALLED POWER | 254 kW | 447 kW | 941 kW | 1,293 kW | 1,421 kW | 2,972 kW | 3,938 kW |
| CONTINUOUS POWER RATING (A-RATING) | 254 kW | 447 kW | 709 kW | 954 kW | 954 kW | 1,825 kW | 1,080 kVA and 1,825 kW |
| TOTAL FUEL CAPACITY (APPROX 100 RUNNING HRS) | 6.0 m³ | 8.4 m³ | 18.8 m³ | 22.0 m³ | 20.0 m³ | 90.5 m³ | 92.0 m³ |

### DECK MACHINERY

| LADDER HOISTING | hydraulic cylinder | winch 50 kN, 0-15 m/min | winch 80 kN, 0-15 m/min | winch 125 kN, 0-15 m/min | winch 270 kN, 0-15 m/min |
| SIDE WIRE WINCHES (2X) | 40 kN, 0-15 m/min | 50 kN, 0-15 m/min | 80 kN, 0-15 m/min | 120 kN, 0-15 m/min | 270 kN, 0-15 m/min |
| SPUD HOISTING (2X HYDRAULIC CYLINDER) Stroke | 1 m | 1.2 m | 1.5 m | 1.5 m | 2 m | 2 m |

### DREDGE PUMP Installation

<table>
<thead>
<tr>
<th>POWER</th>
<th>C12</th>
<th>C18</th>
<th>C32</th>
<th>3512C H</th>
<th>3512C</th>
<th>3516C HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL INSTALLED POWER</td>
<td>254 kW</td>
<td>447 kW</td>
<td>941 kW</td>
<td>1,293 kW</td>
<td>1,421 kW</td>
<td>2,972 kW</td>
</tr>
<tr>
<td>CONTINUOUS POWER RATING (A-RATING)</td>
<td>254 kW</td>
<td>447 kW</td>
<td>709 kW</td>
<td>954 kW</td>
<td>954 kW</td>
<td>1,825 kW</td>
</tr>
<tr>
<td>TOTAL FUEL CAPACITY (APPROX 100 RUNNING HRS)</td>
<td>6.0 m³</td>
<td>8.4 m³</td>
<td>18.8 m³</td>
<td>22.0 m³</td>
<td>20.0 m³</td>
<td>90.5 m³</td>
</tr>
</tbody>
</table>
The standard CSD can be customised effortlessly with a large number of available options. As these options are ready prepared, they can be installed quickly, even after delivery.
THE DAMEN DEEP CUTTER SUCTION DREDGER 500

With sand being dredged at ever greater depths, Damen has added a Deep Cutter Suction Dredger 500 to its portfolio. This compact dredger has been designed to operate at dredging depths that have previously been possible to reach only with larger dredgers.

The fully dismountable DCSD500 has been designed in a catamaran former with the buoyancy provided by pontoons forming the outer limits of the vessel to port and starboard. The suction ladder, which is centrally mounted between them, is fitted with a submerged dredge pump, which is directly driven by a diesel engine. This is also mounted on the ladder. The dredger can be controlled by a single individual from the control cabin, which is raised for the optimal project overview.

CUTTER POWER
Enlarged dredging depth combined with high cutter power.

CATAMARAN CONCEPT
Resulting in easy transportation and compact set up in relation to large dredging depth.

DIESEL ENGINE
Direct build on ladder resulting in the most efficient and reliable possible drive.

SUBMERGED DREDGE PUMP
For highest possible mixture concentrations up to extreme large dredging depths.

POSITIONING WITH SPUD POLES
For precision dredging and optimal distribution of cutter forces.

In 2001 Damen built the first sand-mining dredger with a diesel-direct dredge pump.

The submerged dredge pump is direct driven by the diesel engine mounted on the ladder. It guarantees the most efficient and reliable possible drive.

The new design guarantees the sound come per cubic meter dredged, and greater depths with compacted material.

DCSD500

PRINCIPAL DIMENSIONS
LENGTH O.A. (INCL. LADDER & SPUDKEEPERS) 46.00 m
LENGTH OVER PONTOONS 28.50 m
BEAM O.A. 9.00 m
DEPTH 2.00 m
DRAUGHT (BUNKERS FULL, APPROX) 1.20 m
AIR DRAUGHT (SPUDS REMOVED, LADDER UP) 6.40 m
TOTAL WEIGHT 220 t

DREDGING FEATURES
MIN/MAX DREDGING DEPTH (LADDER ANGLE 3°/45°) 5/25 m
DREDGING WIDTH (40° SWING ANGLE/MAX DEPTH) 44 m
MAXIMUM MIXTURE CAPACITY 4,000 m³/hr

DREDGING INSTALLATION
DAMEN DREDGE PUMP TYPE BP5045
SUCTION/DISCHARGE INTERNAL PIPE DIAMETER 550/500 mm
CUTTER POWER 110 kW

ENGINE INSTALLATION
TOTAL INSTALLED POWER 1,421 kW
CONTINUOUS POWER RATING (A-RATING) 954 kW
TOTAL FUEL CAPACITY (APPROX 100 RUNNING HRS) 20.0 m³

DECK MACHINERY
LADDER HOISTING with 270 kN, 0-15 m/min
SIDE WIRE WINCHES (2X) 120 kN, 0-15 m/min
SPUD HOISTING ON HYDRAULIC CYLINDERS 150 kN, Stroke 1.5 m
Damen offers complete pipeline systems of steel or HDPE, for the transportation of the mixture.

**BOOSTER STATIONS**
Booster stations enable you to extend your discharge distance. They can be remotely controlled and monitored from the CSD.

The standard booster station can be equipped with extra insulating measures to meet noise restrictions specified in environmentally sensitive or urban areas.

The Multi Cat was invented by Damen as the perfect assisting vessel for a dredger. It can perform the following operations:

- Anchor handling and repositioning
- Towing duties of dredger, pipeline, etc.
- Changing cutter teeth
- Connecting pipelines
- Transport of crew, parts, fuel, etc.

With its spacious working deck and 360° view from the wheelhouse, the Multi Cat ensures safe handling and high crew comfort.

Damen offers complete pipeline systems of steel or HDPE, for the transportation of the mixture.

The Multi Cat is the optimal auxiliary vessel for a dredging operation. Besides that, it can be equipped with all kinds of accessories such as a DOP pump, Water Injection Dredger installation or a plough to level the dredged bottom.

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**AUXILIARY EQUIPMENT**
**THE TOTAL PACKAGE**
Damen can ship a complete dredge package to your job site including the pipeline and matching booster station.

**PIPELINE SYSTEMS**

**MULTI CATS**
The pontoons have thicker steel plating where larger stresses are likely to be present, as pictured here at the ladder hinge area at the front of the main pontoon. Plate sides are always bevelled to ensure seamless transition of stress throughout the structure.

Safety in the details: Rotating parts of the drive train are safely kept away by steel grating with soft rubber edges for personnel safety. The opening in the grating enables manual turning of the dredge pump propellor during maintenance.

Extra attention has gone into the structural design and positioning of hoisting eyes, which are fitted with extra thick steel rings and full penetration welding to ensure reliable hoisting of the whole dredger from four points only.

The air conditioning is mounted on rubber pieces to reduce vibration in the wheelhouse.

All pipes are labelled to indicate the flow direction and transported fluids.

The spud keepers are equipped with hinged ‘doors’ on both sides to enable horizontal removal of spuds from the CSD for convenient maintenance.

The pump foundation has been designed in a way that the pump can be placed as low in the CSD as possible to ensure the best possible suction performance.

All abrasive hose parts are sealed to protect them from corrosion.

Underwater parts of the dredger are covered in anodes to prevent corrosion.

All doors and hatches have fastening pins for personnel convenience and safety.

The standardisation of Damen’s CSDs, combined with our commitment to R&D, ensures the continual evolution of the range. Years of continual product development has ensured close attention is paid to all details, no matter how small. Add to this use of high quality materials and you can take confidence in the quality of your dredger.

The Damen CSD incorporates state-of-the-art solutions for corrosion prevention. All steel parts are well-rounded and welding is done without overlap or undercutting.

**QUALITY IS IN THE DETAIL**

**PAINTING**

The Damen CSD incorporates state-of-the-art solutions for corrosion prevention. All steel parts are well-rounded and welding is done without overlap or undercutting.

1 Coat INTERSHIELD 300 Bronze 150
1 Coat INTERSHIELD 300 Aluminium 150
1 Coat INTERGARD 263 Light Grey 75
1 Coat INTERSMOOTH 465 SPC Red 110
1 Coat INTERSMOOTH 365 SPC Brown 110
1 Coat INTERSMOOTH 365 SPC Red 110

<table>
<thead>
<tr>
<th>Hull Outside, Below Load Waterline Thickness (µM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 All functions are well-balanced in such a way as to ensure optimal performance.</td>
</tr>
<tr>
<td>2 The spud poles are made of heavy gauge pipe and are lifted by steel wires and single acting hydraulic cylinders. The spud keepers are designed so that the spuds can be lifted up to the bottom level of the CSD and can be hinged for easy removal.</td>
</tr>
<tr>
<td>3 Transitions between pontoons are bridged with flexible hoses.</td>
</tr>
<tr>
<td>4 The CSD is equipped with extra strong side winches to ensure high production in hard or coarse material or when operating in water with current.</td>
</tr>
</tbody>
</table>
CONDENSE FILTERS HYDRAULIC TANK

The separate stainless steel hydraulic tank is equipped with silica gel deaerator filters to prevent condensed water contaminating the hydraulic system.

BOX COOLERS OUTSIDE

Excluding the CSD650, the engine(s) and gearbox of all CSDs are fresh-water cooled by box coolers. They are placed in a well protected location at the starboard aft side of the main pontoon, giving straightforward access for easy cleaning.

A DUAL ACT

The CSD450 and larger models are equipped with two (three in the case of the CSD650) engines. A main engine dedicated to the dredge pump and a smaller auxiliary engine to power the electric and hydraulic system. This has the following advantages:

■ The use of hydraulics does not influence the available power for the dredge pump and makes the dredging process more stable and efficient
■ During idle time/maintenance hours the main engine can be shut down as the necessary electric and hydraulic power is delivered by the smaller auxiliary engine, resulting in less fuel consumption

The engine room naturally requires regular inspection. Damen’s larger CSDs have spacious engine rooms with wide footholds and ample headroom, ensuring optimal accessibility.

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ENGINE ROOM

ONE. BIG. POWERHOUSE.

The engine room naturally requires regular inspection. Damen’s larger CSDs have spacious engine rooms with wide footholds and ample headroom, ensuring optimal accessibility.

All CSDs are powered by modern computer-controlled Caterpillar diesel engines with low fuel consumption and low emissions, allowing the operator to operate simultaneously. Just like Damen, Caterpillar stands for high performance in combination with quality and a worldwide network.

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The separate stainless steel hydraulic tank is equipped with silica gel deaerator filters to prevent condensed water contaminating the hydraulic system.
MECHANICAL SHAFT

Damen’s highly efficient dredge pumps are fitted out with a mechanical shaft that is both maintenance friendly and environmentally friendly. This special shaft seal does not require grease or gland water, so minimizes service downtime.

BUILT TO LAST

The pump parts in contact with the abrasive mixture are casted from wear and impact resistant materials. Based on the soil type, we deliver the most suitable wear material.

EASY MAINTENANCE

An inspection piece in front of the dredge pump can be easily removed to free space for (dis)mounting the impeller, housing and wear plates.

THE DREDGE PUMP
THE HEART OF THE MACHINE

The CSD dredge pump is an in-house designed pump with unrivaled high performance. Due to its large spherical passage, blockage of the pump is kept to a minimum. The dredge pump is always located under a hatch to facilitate convenient replacement of inevitable wear parts. BUILT TO LAST

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An inspection piece in front of the dredge pump can be easily removed to free space for (dis)mounting the impeller, housing and wear plates.

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PRODUCTION CURVES

At max. dredging depth and 25% concentration. Calculations assume: free flowing sand and no restriction on suction side. Discharge pipe is straight and horizontal with an elevation of 2 metres.

Production solids (in-situ m³/hr) 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000 11,000 12,000 13,000

Discharge length in metres (m) 0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000

CSD 650 CSD 500 CSD 450 CSD 350 CSD 250
The operating cabin is ergonomically designed, with conveniently placed components and controls at your fingertips. Due to sound insulation measures and the use of double-glazed windows, noise levels are low. Furthermore, the cabin is placed on shock absorbers to reduce vibration.

A ONE-MAN-SHOW

With an excellent overview on all essential deck equipment from the operating cabin and the implementation of a sophisticated control system, the Damen CSD allows for operation of the dredger by a single person.

The design of the wheelhouse and placement of deck equipment provides the dredge operator with a clear overview during the dredging process.

The design ensures excellent visibility of the essential functions.

The cabin roof extends the cabin floor and the grey-tinted double glazed front windows are placed in a sloped panel to reduce sun reflection.
As well as building at our own yards, we also assist our customers in building Damen vessels at a yard of their choice via the Damen Technical Cooperation (DTC). This highly flexible option results in a valuable transfer of technology and enables owners to enjoy Damen quality, combined with the convenience of local production. Since DTC was established, over 1,000 vessels have been produced locally in more than 70 countries worldwide. Damen can deliver anything from the licence and vessel design to a full material package and, if necessary, turnkey solutions based on client requirements. DTC’s scope covers the entire Damen portfolio.

Integrated Logistics Support
- Reliability, availability and maintainability analysis
- Reliability centered maintenance analysis
- Logistic support analysis

DELIVERY
- Warranty support
- My Damen
- Commissioning

Getting Started

Combined Services Package
- Ship delivery
- Initial spare parts package
- Vessel operating manual
- Training
- Maintenance management solutions

Long-Term Service Agreement
- All-round services
- Fleet support, parts, maintenance and repair
- Consultancy
- Damen Digital
- Conversion
- Refit

Integrated Logistics Support
- Integrated Logistics Support (ILS) is increasingly applied in the commercial and coastguard sectors today.

Warranty Support
- Customer satisfaction is of utmost importance to us. Customers can reach out to a dedicated service team 24 hours a day, seven days a week. As well as having access to Damen via our mobile app, customers are visited by a Damen technician, regardless of whether there is an issue or not.

Innovation & Development
- We respond to the rapidly changing maritime industry by supporting our customers in developing new water transport solutions.

Worldwide Service Hubs
- Damen Services intends to provide added value to a Damen vessel, whether this involves a single intervention or a complete package such as integrated logistics support or a long-term service agreement.

Integrated Logistics Support
- Integrated Logistics Support (ILS) is increasingly applied in the commercial and coastguard sectors today. If requested, Damen can supply a customised ILS programme with our newly built products.

Getting Started
- Damen Services is in charge of the service package to specific requirements. Whether this involves a single intervention or a complete package such as integrated logistics support or a long-term service agreement.

Long-Term Services Agreement
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Innovation & Development
- We respond to the rapidly changing maritime industry by supporting our customers in developing new water transport solutions.
Damen Shipyards Group operates 36 shipbuilding and repair yards, employing 12,000 people worldwide. Damen has delivered more than 6,500 vessels in more than 100 countries and delivers some 175 vessels annually to customers worldwide. Based on its proven, standardised ship-design concept Damen is able to guarantee consistent quality.

Damen’s focus on standardisation, modular construction and keeping vessels in stock leads to short delivery times, low ‘total cost of ownership’, high resale values and reliable performance. Furthermore, Damen vessels are based on thorough R&D and proven technology.

Damen offers a wide range of products, including tugs, workboats, naval and patrol vessels, high-speed craft, cargo vessels, dredgers, vessels for the offshore industry, ferries, puntboats and cyclophores. For nearly all vessel types Damen offers a broad range of services; including maintenance, spare parts delivery, training and the transfer of shipbuilding know-how. Damen also offers a variety of marine components such as nozzles, rudders, winches, anchors, anchor chains and steel works.

Damen Shiprepair & Conversion (DSC) has a worldwide network of eighteen repair and conversion yards of which twelve are located in North West Europe. Projects range from the smallest simple repairs through Class’ maintenance to complex refits and the complete conversion of large offshore structures. DSC completes around 1,300 repair and maintenance jobs annually, both at yards as well as in ports and during voyage.

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A BROAD SCOPE OF VESSELS

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