Standardisation

Global presence and support

Damen Trading

Customer Finance

Damen Technical Cooperation

Top quality

Crew safety and comfort

Dredging operations

Damen Shiprepair & Conversion

Damen Services
The Dutch have lived below sea level for centuries. We respect the sea, whether we fight against her waves or sail across her oceans. For both we need ships: purpose-built, thoroughly researched, proven over time and outfitted with the latest innovations. Damen builds those ships.

When it comes to dredging, Damen delivers the complete range of vessels and services needed for the job. Our dismountable Cutter Suction Dredgers have extremely short delivery times and, like our Trailing Suction Hopper Dredgers, are based on the latest technology, research and design.

As Damen is a total solution provider, we deliver also all the auxiliary equipment, such as booster stations, pipelines and instrumentation to optimise the dredging process. In addition, we build dedicated dredging support vessels, such as Multi Cats and Shoalbusters, Stan Tugs and Survey Vessels.

To ensure the continuous and smooth operation of our clients’ dredging systems, Damen Services offers repair, maintenance and training facilities from Service Hubs around the world.
The maritime industry recognises the increasing focus on environmental sustainability. With operations close to shore and in major urbanised areas, the environmental impact that the dredger has needs to be minimised. Damen has developed, tested and delivered a range of electrically driven dredge pumps, as well as electrically powered dredgers. These electric drives effectively reduce emissions and noise levels and minimise environmental risks.

Moreover, Damen fits out all its dredge pumps with a mechanical shaft seal, which does not require additional greasing. Damen continues to work towards reducing the environmental impact of dredging.

All Damen dredgers benefit from thorough R&D and, with research taking place on successive generations of standard dredgers, continual product innovation is guaranteed.

A dedicated research team investigates dredge processes in Damen dredgers. This results in a knowledge centre which ensures that the latest developments in dredging technology are applied in standard dredging products. Continuous improvements in the equipment makes the standard dredgers efficient, environmentally friendly and safe.

Based on the research of the dredging process and understanding the requirements results in innovative solutions for challenging demands.
BENEFITS OF STANDARDISATION
- Fast response to customer requests
- Competitive pricing
- Short delivery times due to stock hulls
- Reliable, tested and proven technology
- Continuous product development
- Interchangeability of ships, crew, spares
- Lower maintenance costs
- Guaranteed performance
- Benchmark for the industry

BUILDING ON STOCK
PROVEN DESIGN, SHORT-TERM DELIVERY

STANDARDISATION
KEY TO SUCCESS

Building standard dredgers in series gives our clients fast access to proven, reliable technology. Our standard designs can be tailored to individual client needs via modular construction, ensuring you of the dredger you need, whatever challenge you are facing. Standard designs can always be equipped with various options to suit specific tasks.

DAMEN STANDARD

Keeping our standardised dredgers on stock enables us to deliver them to you in record time. From initial order, outfitting and trials, the dredger can be delivered to you in a matter of a few short months or even weeks.
Damen is a family business founded in 1927, in the Netherlands. Today, Damen operates 36 yards on five continents, employing over 12,000 people. Since its origins, Damen has delivered more than 6,500 vessels in over 100 countries and delivers approximately 160 newbuild vessels annually.

Based on its unique, standardised ship-design concept Damen is able to guarantee consistent quality.

Damen Trading is specialised in the sale, purchase and chartering of all types of used vessels. Over the years, Damen Trading has acquired a lot of knowledge in brokerage, ensuring you of a complete service before, during and after vessel acquisition.
Damen Customer Finance offers a selection of arrangements, applicable to any Damen product for clients in both the private and public sectors.

As a major client of the Dutch Export Credit Agency Atradius, Damen has gained a wealth of experience in the arrangement of export loans.

Damen can assist customers in building Damen vessels locally via 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, Damen has built over 1,000 vessels locally in over 70 countries.

Damen can deliver 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.

**CUSTOMER FINANCE**
FINANCING AND LEASING

**THINK GLOBAL, ACT LOCAL**
DAMEN TECHNICAL COOPERATION

**DESIGN & LICENCES**
- Basic and/or detailed designs provided
- License/royalty for multiple series
- Proven design

**MATERIAL PACKAGES**
- Renowned suppliers
- Materials on stock
- Advanced logistics

**BUILDING ASSISTANCE**
- Assistance on-site
- Enhance shipyard skills
- Transfer of knowledge/technology
YOUR PARTNER FOR SHAPING YOUR DREDGING JOB
VESSELS FOR ALL DREDGING OPERATIONS

MAINTENANCE DREDGING
- Maintaining harbours and ports at depth
- Keeping navigation channels open
- Beach nourishment for coastal protection
- Keeping inlets at hydropower dams clean

CAPITAL DREDGING
- Creating a new harbour
- Reclaiming land from the sea
- Expansion of existing harbours

AGGREGATE DREDGING
- Offshore mining of sand and gravel
- Onshore mining of sand and gravel
- Deep sea mining

ENVIRONMENTAL DREDGING
- Removing polluted sediment in harbours
- Cleaning lakes and shores at industrial sites
Whatever dredging job you are doing, there is a Damen dredger and the necessary equipment to tackle it – all designed with harsh operating environments in mind. The long-term presence of Damen in the various segments of the dredging industry has resulted in a wide range of standard dredgers and auxiliary vessels which can be customised effortlessly.

YOUR OPERATIONS CAN BE ENHANCED USING CUSTOMISED DREDGERS

- Trailing Suction Hopper Dredgers can be equipped with customised hopper discharge equipment;
- Cutter Suction Dredgers can be delivered or retrofitted with options such as anchor booms or spud carriage pontoons, boosting their operational efficiency;
- DOP Dredgers are designed as modular constructions of limited unit size and weight and can be transported to remote areas smoothly;
- Marine Aggregate Dredgers are designed to fit your operational profile keeping loading time and sailing speed first, ensuring timely tidal harbour access.
Top quality means a robust, fit for purpose design. Top quality is mastering every detail, without losing track of the overall concept. Damen makes all its dredgers and dredging components ready for heavy-duty operations. Our design fundamentals are reliability and durability – keys to making every dredging job a success.
CREW SAFETY AND COMFORT
ALWAYS TOP OF MIND

Safety is an important driver in all that we do. The dredging business is no exception. Besides safety, crew comfort is a key focus. This is why our dredgers are spacious, with comfortable control cabins and bridges as well as ergonomic layout of workspaces with clear lines of sight.
THE DREDGING PORTFOLIO

1. CUTTER SUCTION DREDGERS
   - Sand mining
   - Capital dredging

2. TRAILING SUCTION HOPPER DREDGERS
   - Harbour maintenance
   - Capital dredging
   - Deep sea mining
   - Beach nourishment

3. DOP DREDGERS
   - Hydro power dam maintenance
   - Environmental clean ups
   - Sand mining

4. DOP DREDGE PUMPS
   - Barge unloading
   - Sand mining
   - Environmental clean-up
   - Creating building pits

5. WID DREDGING SYSTEMS
   - Mass flow sediment removal

6. MULTICATS
   - Anchor-handling
   - Floating pipe line-handling
   - Cutter teeth replacement

7. BOOSTER STATIONS
Maintenance dredging ensures optimal access to existing navigation channels and continued operations of hydropower dams. The aim is to combat the effects of rivers, currents and tides which would otherwise silt up with the constant ebb and flow of tides and currents.

The solution lies in using lightly manoeuvrable Trailing Suctions Hopper Dredgers or stationary Cutter Suction Dredgers to keep things flowing. For the deep inlets of hydropower Damen DOP dredgers are the perfect tool.
CAPITAL DREDGING
Capital dredging involves reclaiming new stretches of land from the water. This includes creation and expansion of harbours.

Capital dredging is necessary as seaborne trade continues to grow and in order to accommodate patterns of urban development.
A growing world economy and population requires a constant supply of sand and gravel. This continuous demand for construction materials requires a constant feed of aggregates.

The aggregate dredging industry operates inland mining pits as well as offshore activity.

Efficient offshore operations take into account the full operational profile, including sailing distances, loading times and restrictions, in order to ensure efficiency in transshipment.

For onshore mining, Damen supplies various dredgers, catering for diverse dredging depths and material hardness.
ENVIRONMENTAL DREDGING
Dredging has a role in helping to safeguard the environment. For example, cleaning up contaminated sediment from waterways. These contaminated sediments can be removed to be cleaned or stored.

Key features during environmental clean-up include achieving the highest possible mixture concentration and minimal turbidity. Precision dredging can be achieved using the right tools and instrumentation for the job, resulting in a safe environment for the crew as well as for local residents.
The Damen standard CSD range consists of five types of dredger. These stationary vessels include an ergonomically designed operating cabin, a main pontoon housing the diesel engines and dredge pump, plus side pontoons, the cutter ladder and the spud poles. This modular design ensures practical transport. Moreover, the compact size and weight result in practical dismantling and reassembly on the jobsite.

The CSDs are well powered – the power balance is such that all functions of the dredgers can be operated simultaneously. The modern computer controlled Caterpillar diesels engines have been selected on low fuel consumption and low emission values. They are connected to a closed fresh water cooling system using box coolers.

CSD RANGE

| DEPTH | up to 25 m |
| DREDGE PIPE | diameter from 250 - 650 mm |
| MIXTURE CAP | up to 7,000 m³/h |
| INSTALLED POWER | up to 3,966 kW |
| TOTAL WEIGHT | up to 580 t |

AVAILABLE OPTIONS

- Anchor booms
- Spud carriage pontoon
- Day accommodation
- Deck crane
- Navigation package
- Communication package
- Wedge piece
- Swivel hose
- Heavy duty cutter
- Increased dredging depth
- Dredge pump production measurement
- Position visualisation
- Class certificate
The wide standard range of TSHDs has been designed as dedicated maintenance dredgers built around a modular concept. This means they are prepared for a large number of options. The basic version TSHD is a budget-friendly dredger, perfect for efficient harbour and navigation channel maintenance.

With the possibility of fully customising the dredgers, the standard TSHDs are highly efficient, fitted out to the latest technology standards. Durability has been a key consideration in the design process.

**AVAILABLE OPTIONS**
- Self-discharging installation
- Degassing system
- Instrumentation packages

**TSHD RANGE**
- **DEPTH**: up to 25 m
- **TRAILING PIPE**: diameter up to 750 mm
- **HOPPER VOLUME**: 650 - 2,500 m³
- **INSTALLED POWER**: up to 4,062 kW
- **DEADWEIGHT**: up to 3,775 t

**MAINTAINING THE RIGHT DEPTH**

***TSHD SERIES***
Damen offers a complete range of heavy-duty submersible dredge pumps. These compact DOP pumps are directly powered by either a hydraulic or an electric motor, mounted in a protective casing. A highly efficient, wear-resistant dredge pump with a large spherical passage is at the heart of the DOP pump. It has excellent suction properties and reaches extremely high mixture densities.

The DOP pump has been designed for highly abrasive dredging environments. It is user friendly and easy to maintain.

VERSATILITY IS KEY

DOP SUBMERSIBLE DREDGE PUMPS

AVAILABLE OPTIONS
- Various suction heads
- Electrically and hydraulically powered DOPs
- Diesel hydraulic power packs
- Diesel driven jet water packs
- Mixture hoses with and without floats
- Discharge piping on land and afloat
- Hydraulic hoses including quick couplings
- Dredge pump production measurement
- Position visualisation

DOP PUMP RANGE
- Depth: unlimited
- Dredge pipe diameter from 180 - 450 mm
- Mixture capacity: up to 4,000 m³/h
- Installed power: up to 400 kW
- Total weight: up to 7.35 t
The DOP Dredgers come in different sizes, and can each be delivered in four different configurations, depending on the dredging depth as well as on the sand mining method required. Key to the DOP Dredger is its modular design, enabling easy transport, local construction of the pontoons and practical later additions following an increased dredging depth.

The DOP dredger is of a simple design which is the result of using standard dredging components, smartly made for quick reassembly even in remote locations. The submersed dredge pump maximises the dredge production.
Damen developed a dedicated range of Marine Aggregate Dredgers (MAD) for the offshore mining of sand and gravel. Great effort has been made to optimise the hull design, benefitting from our strong track record in ship designs for the offshore industry and resulting in excellent seakeeping performance.

Our in-house designed trailing pipe, underwater dredge pump and screening towers ensure efficient dredging operations. The vessel is able to autonomously unload the dry cargo to shore.
All booster stations are fitted out with a radiator-cooled Caterpillar diesel engine, which has a constant power over a large speed range. The direct driven dredge pump is identical to those in CSDs, making the booster station the ideal tool to bridge large discharge distances after stationary dredgers.

The design of the booster station’s frame is based on container sizes, enabling practical hoisting and transport. The diesel engine is mounted in a casing. The dredge pump is directly accessed for easy maintenance.
Complete trailing pipe packages are shipped around the globe for newbuilds or retrofits of trailing suction hopper dredgers. The trailing pipe system is designed for a specific vessel, making use of a range of standard components.

At the heart of each dredger is a Damen in-house designed dredge pump, cast in wear resistant materials, fitted out with a maintenance friendly mechanical seal. The dredging package may include any hopper loading or discharging component – all according to the hopper dredgers specific operational profile.
Efficient dredging is the key in any dredging job. Yet due to the nature of the job, very little of it is actually directly visible for the operator. Dredging instrumentation makes the invisible visible for the operator, lending a pair of eyes on the functionality of the cutting tool, the efficiency of the dredge pump, or refining the dredged location. Valuable process parameters are shown on screen enabling the operator to maximise the production.

Damen can deliver dredging instrumentation, spanning everything from a simple dredge pump monitoring vacuum transmitter, to a comprehensive, state-of-the-art package combining data from all aspects of the operation. All dredging instrumentation is available for newbuilds as well as retrofits.
A Water Injection Dredger (WID) aims to remove sediment by injecting it with pressurised water. The bottom sediment, being recently deposited silt or sand, will lift and be removed by current, gradient or tidal movement.

The WID gear can be integrated on a new vessel, or it can be retrofitted to an existing one. The design of the various components is such that it is delivered as a dismountable feature. As a result, flexibility is added to the primary tasks of the vessel. The plug and play system can be installed easily without docking.
The Multi Cat is a reliable workboat fit for a variety of tasks in the dredging environment. Its large, flush deck space without obstructions is optimised to accommodate gear such as dredge anchors and discharge piping. It is fitted out with a crane for tasks such as delivering supplies and spares to dredgers. From the wheelhouse the crew has 360° visibility. All jobs can be handled with minimal crew.

This shallow draught workhorse can do its job effortlessly in harbours, shallow waters as well as coastal areas. It is strongly constructed – well above Class requirements. The Multi Cat is fitted out with heavy fendering.
Deep sea mining up to -200 m has been made possible using the RoRo modular system. This innovative concept includes a continuous loading process which boosts the efficiency. The new development is an answer to a growing demand for raw materials while sand winning locations are located farther from shore at increased dredging depths.

Two vital aspects of the RoRo Deep Dredge installation are the key to its flexibility. First of all the dredging equipment is placed on a Platform Supply Vessel – thus the storage and transport facility of the mined sand has been separated and performed by a number of barges. Secondly, the steel suction pipes of TSHDs have been replaced by a flexible hose. Hence the dredging depth can vary and has become independent from the vessels’ length.

Any dredging job requires support vessels, whether it is a pontoon for easily moving around an excavator with a DOP pump, a number of hopper barges for transporting the dredged sediment, or a customised locally assembled modular vessel or platform using container-sized barge modules.

All standard pontoons and barges have a wide scope of usage. The standardised vessels are available in a range of sizes for use in all waters.
In addition to shipbuilding and ship design, Damen offers a network of 16 repair and conversion yards worldwide. With drydocks up to 420 x 80 metres, Damen handles 1,500 repair and maintenance jobs annually. The facilities are spread throughout Europe and in Singapore, South Africa, Americas and the UAE, for your convenience and flexibility.
A multi-purpose pontoon had another function added to its various roles: a complete dredging system was added. The system comprised of a trailing pipe working at max -35 m complete with an integrated electrically driven dredge pump.

On deck the gantries, winches and a swell compensator were built. Moreover, on board piping including production measurement instrumentation was supplied, plus various hydraulic and electric power packs. Furthermore, a dedicated loading arm for efficiently filling barges sailing alongside completed the package.

CASE 1: CONVERSION TO DUAL FUEL HOPPER DREDGER

Damen Shipperep Dunkerque converts the 8,500 m³ trailing suction hopper dredger Samuel de Champlain. The hopper was built in 2002 with a diesel-electric burning MGO propulsion system. Now, it will run on dual-fuel combining LNG and MGO.

The turnkey package includes engineering, procurement and changing the generators to dual-fuel models as well as the installation of onboard LNG storage facilities. The conversion, the first of its kind in Europe, is part of an EU-supported initiative to promote LNG propulsion in short-sea vessels operating along the European Atlantic coast.

CASE 2: CONVERSION MULTI PURPOSE PONTOON TO TRAILING DREDGER
DAMEN SERVICES
NEVER SET SAIL ALONE

From the moment your vessel is ordered, Damen Services is on board. We offer a wide-ranging portfolio of customer support and after-sales services covering the vessel’s complete lifecycle.

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 program with our newly built products.

GETTING STARTED
Damen Services is able to tailor its service packages to specific requirements. In this way we ensure our clients can begin their operations as soon as we deliver their vessel on location.

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.

KEEPING YOU GOING
Downtime is becoming more and more expensive. Damen Services’ portfolio enables reduction of downtime, either upfront via taking over the entire maintenance strategy or via quick intervention if a malfunction occurs.

INNOVATION
We respond to the rapidly changing world with the continuous development of our services. This includes an expanding focus on digitalisation and sustainability. Examples include remote monitoring, a personal web portal for maintenance management, 3D parts printing and intelligent asset management.

WORLDWIDE SERVICE HUBS
To fulfill our customers’ need for short reaction times and understanding of local languages and cultures, Damen Services started multiple Service Hubs. These Service Hubs are tailored to regional demands and are able to supply all necessary services from our portfolio.

INTEGRATED LOGISTICS SUPPORT
DELIVERY
COMBINED SERVICES PACKAGE
LONG-TERM SERVICE AGREEMENT

RELIABILITY, AVAILABILITY AND MAINTAINABILITY ANALYSIS
WARRANTY SUPPORT
MY DAMEN COMMISSIONING
SHIP DELIVERY
INITIAL SPARE PARTS PACKAGE
VESSEL OPERATING MANUAL TRAINING
MAINTENANCE MANAGEMENT SOLUTIONS

ALLROUND SERVICES
FLEET SUPPORT:
PARTS, MAINTENANCE AND REPAIR CONSULTANCY
CONVERSION REFIT
A BROAD SCOPE OF VESSELS

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 160 vessels annually to customers worldwide. Based on its unique, 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 value 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, pontoons and superyachts.

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 Shipyards & Conversion (DSC) has a worldwide network of eighteen repair and conversion yards of which twelve are located in North West Europe. Facilities at the yards include more than 50 floating (and covered) drydocks, including the longest, 420 x 80 metres, and the widest, 405 x 90 metres, as well as slopes, ship lifts and indoor halls. 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.