AQUACULTURE IS HERE TO GROW

Aquaculture needs a strong, sustainable rate of growth in order to keep up with demand for food as global populations rise.

Growth of nearshore aquaculture will be significant in many regions with more countries expanding and starting up their activities. We will also see more species being farmed in the future. New initiatives for aquaculture operations farther from shore are developing quickly. As the industry advances, requirements for safety, costs and environmental considerations must be considered.

Damen supports the safe, sustainable development of a reliable aquaculture industry, both nearshore and offshore with standard-setting maritime solutions.
The maritime industry recognises the increasing urge for environmental awareness. With operations close to shore and close to food for human consumption, the environmental impact that the vessel has needs to be minimised.

Damen has developed, tested and delivered several vessels with diesel-electric propulsion systems, which effectively reduce fuel consumption, emissions and noise levels. Fully electric propulsion (in combination with remote charger stations) is the logical next step and an interesting option for nearshore operations.

All Damen vessels benefit from thorough R&D and, with research taking place on successive generations of standard vessels, continual product innovation is guaranteed. Damen is proactive in developing sustainable and cost-effective vessels and services. Our R&D team is always developing ways to make our vessels safer, more comfortable and more efficient, both economically and environmentally.

Damen enjoys close cooperation with a number of leading research institutes.
BENEFITS OF STANDARDISATION
- Fast response to customer requests
- Competitive pricing
- Short delivery times due to stock hulls
- Reliability, proven and tested technology
- Continuous product development
- Interchangeability of ships, crew, spares
- Lower maintenance costs
- Guaranteed performance
- Benchmark for the industry

STANDARDISATION
KEY TO SUCCESS
Building standard vessels 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 vessel you need, whatever challenge you are facing. Standard designs can always be equipped with various options to suit specific tasks.

BUILDING ON STOCK
PROVEN DESIGN, SHORT-TERM DELIVERY
Keeping our standardised vessels on stock enables us to deliver them to you in record time. From initial order, outfitting and trials, the vessel can be delivered to you in a matter of a few short months or even weeks.
Damen Trading is specialised in the sale, purchase and chartering of all types of used vessel. 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.

A family business, founded in 1927 in the Netherlands, today Damen operates 33 yards on 5 continents, employing over 9,000 people. Since its origins, Damen has delivered more than 6,000 vessels in more than 100 countries. Damen delivers approximately 180 newbuild vessels annually. Based on its unique, standardised ship-design concept Damen is able to guarantee consistent quality.
CUSTOMER FINANCE
FINANCING AND LEASING

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.

THINK GLOBAL, ACT LOCAL
DAMEN TECHNICAL COOPERATION

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, over 1,000 vessels have been produced locally in more than 70 countries worldwide, including those with large aquacultural industries such as Canada and China.

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.

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 MARINE AQUACULTURE SOLUTIONS
VESSELS FOR ALL MARINE OPERATIONS

FISH HANDLING OPERATIONS
- Transport of smolt and grown fish
- Transport and distribution of fish feed
- Delousing and other fish treatment operations

INFRASTRUCTURE INSTALLATION, MAINTENANCE AND REMOVAL
- Towing/transport of fish farms/barges
- Mooring operations
- Anchoring/drilling
- Deploying in-farm infrastructure
- (De)installation operations

SUPPORT & TRANSPORT
- Transport of personnel
- Transport of fish feed
- Diving support
Marine operations account for approximately 20% of the costs of marine aquaculture. Damen’s approach, guaranteeing reliable performance, easy availability of spare parts, long lifetime usage and low maintenance requirements offers a significantly lower total cost of ownership.

**EXAMPLES OF COST SAVING SOLUTIONS**

- The displayed combination of a Multi Cat and Pontoon increases the efficiency of marine operations.
- Conversion of existing offshore vessels to live fish carriers.
- Modular designs allowing quick adaptability for new equipment and vessel functions.
- Vessels on stock for fast delivery.
Biology governs the growth within fish farms. By understanding the processes, Damen can anticipate market needs with innovative solutions.

Examples include our cooperation with equipment manufacturers to reduce stress during fish treatment operations. Additionally we provide solutions to remove contamination from the seabed and nets based on our dredging experience.
SAFETY
ALWAYS TOP OF MIND

Safety is an important driver in all that we do; aquaculture is no exception. Damen’s solutions for the aquaculture industry are aimed to increase the safety of operations and crew, both nearshore and offshore.

EXAMPLES OF OFFERED SAFETY SOLUTIONS
■ Unmanned drilling, reducing the need for diving operations
■ Remotely operated cranes
■ Safe crew transfer solutions for offshore aquaculture

INCREASING CREW SAFETY
**LIVE FISH CARRIER**
Fresh water delousing, transfer of live fish

**UTILITY VESSEL**
Flexible platform for installation, maintenance and delousing operations

**STAN TENDER**
Fast crew and material transfer, diving and ROV support

**CREW TRANSFER VESSEL**
Crew transfer, diving support and small delousing operations

**STAN TUG**
For installation and towing nets

**STAN PONTOON**
Flexible deck space for maintenance, delousing, feed barge, accommodation

**MULTI CAT**
Maintenance, lifting and cleaning nets. Sufficient deck space for delousing solutions
The Damen Multi Cat range is a standardised series of vessels that are versatile and multi-purpose with a high level of available power. As such, they are in high demand across many maritime sectors.

Their suitability for the whole range of infrastructural operations ensures their suitability for use within the aquaculture industry.

For navigating at fish farms, the Multi Cat offers optimal manoeuvrability. An ergonomic wheelhouse, placing all communications and navigation equipment within easy reach of the operator, offers 360-degree visibility. A large amount of deck space means that the Multi Cat can easily accommodate pumps and delousing equipment. Due to the standardisation of the Multi Cat series, these vessels can be delivered quickly.

**WORKHORSE**

**MULTI CAT SERIES**

**SUITABLE FOR**
- Maintenance
- Installation and anchoring
- Towage
- Diving and ROV support
- Anchor handling

**DAMEN MULTI CAT**

**SIZES**
- 9 – 37 metre designs

**CRANE CAPACITY**
- Up to 340 tm
- Up to 34 metre arm length

**BOLLARD PULL**
- 1.5 to 50 tonnes

**OPTIONS**
- 2nd crane, delousing equipment, DP2
The Damen Stan Pontoon is a straightforward platform with a wide scope of usage. This standardised vessel is available in a range of sizes for use on all waters.

Damen’s philosophy of standardisation and series production ensures fast delivery of this proven product. Damen pontoons are well suited to accommodate all generators and associated equipment for use in the aquaculture industry. They can be equipped above or below decks with project specific equipment, such as cranes, ballast systems, pumps, generators and even modular propulsion systems.
Damen Utility Vessels are highly adaptable platforms. They can support a wide range of aquaculture operations, such as delousing, harvesting, transporting, maintenance and installation operations.

They feature large open deck areas and also sufficient storage space below deck for the installation of sensitive or supporting equipment. The vessels are highly manoeuvrable for safe and efficient navigation within fish farms.

The versatile nature of the designs mean that the Utility Vessel can be put to work in other markets without the need for an expensive conversion. For example, these vessels are suited to operations in both offshore renewable and non-renewable industries and as supply vessels.
Damen offers designs for Fish Carriers. Our state-of-the-art designs for Life Fish Carriers focus on an increase in fish quality and wellbeing. They can be used for both live fish transport and for fresh water-based fish treatment.

Our designs for Fish Harvesting Vessels incorporate latest process technology and knowhow from our factory trawlers, to ensure optimal quality of the product.

Both types of vessels are designed to ensure that they can safely approach and moor alongside the nets, that the crews can safely and efficiently do their work and that turn-around times are as short as possible so to minimize the impact on the daily fish farm operations.
Damen offers an array of transfer solutions providing safe, comfortable and weatherproof transport of crew and materials. Depending on the exact transport needs, a larger deck space, a higher crew capacity or faster cruising speeds can be delivered. For transport in rougher water, Damen offers vessels outfitted with the Axe Bow. Depending on the exact requirements, Damen offers vessels with aluminium, steel or fibre reinforced plastic (FRP) hulls.

**TRANSFER SOLUTIONS**

**GETTING YOU THERE FAST & SAFE**

**SUITE FOR**
- Crew transfer
- Inspection
- Fast material transfer
- Diving support

**ALWAYS A BEST FIT SOLUTION**

**STAN RANGER 1604**
- **DIMENSIONS**: 16 x 4 metres
- **SPEED**: 14 knots (approx.)
- **PASSENGERS**: up to 20
- **DECK SPACE**: 32 m²

**FAST CREW SUPPLIER 2008**
- **DIMENSIONS**: 20 x 8 metres
- **SPEED**: 25 knots (approx.)
- **PASSENGERS**: up to 12
- **DECK SPACE**: 50 m²

**FAST CREW SUPPLIER 2610**
- **DIMENSIONS**: 26 x 10 metres
- **SPEED**: 25 knots (approx.)
- **PASSENGERS**: up to 12
- **DECK SPACE**: 90 m²

**FAST CREW SUPPLIER 1204 FRP**
- **DIMENSIONS**: 12 x 4 metres
- **SPEED**: 25 knots (approx.)
- **PASSENGERS**: up to 12
- **DECK SPACE**: 8 m²

**FAST CREW SUPPLIER 1605 FRP**
- **DIMENSIONS**: 20 x 8 metres
- **SPEED**: 29 knots (approx.)
- **PASSENGERS**: up to 30
- **DECK SPACE**: 17 m²

**STAN TENDER 1905**
- **DIMENSIONS**: 19 x 5 metres
- **SPEED**: 25 knots (approx.)
- **PASSENGERS**: up to 16
- **DECK SPACE**: 12 m²
Damen’s portfolio also contains a wide range of bulk and project cargo transfer solutions that are safe, comfortable and weatherproof. Aquaculture infrastructure such as nets, fish feed barges and temporary equipment can be transported with the use of one of Damen’s standard tugs. Fish feed transport can be carried out with one of Damen’s adaptable cargo designs or by a tug and barge combination.

**A SELECTION FROM OUR PORTFOLIO**

**STAN TUG 1004**
- DIMENSIONS: 10.6 x 4.5 metres
- SPEED: 8.3 knots (approx.)
- CREW: 2
- DECK SPACE: 12 m²
- BOLLARD PULL: 4.1 tonnes

**STAN TUG 1606**
- DIMENSIONS: 16.6 x 5.9 metres
- SPEED: 11.0 knots (approx.)
- CREW: 4
- DECK SPACE: 28 m²
- BOLLARD PULL: 16.0 tonnes

**SHOALBUSTER 1907**
- DIMENSIONS: 20.5 x 7.0 metres
- SPEED: 10.0 knots (approx.)
- CREW: 4
- DECK SPACE: 60 m²
- BOLLARD PULL: 13.0 tonnes

**PLATFORM SUPPLY VESSEL 1600**
- DIMENSIONS: 60.8 x 4 metres
- SPEED: 12 knots (approx.)
- CREW: 15
- DECK SPACE: 390 m²

**COMBI COASTER 2750**
- DIMENSIONS: 88.6 x 12.5 metres
- SPEED: 10.8 knots (approx.)
- CREW: 8
- DECK SPACE: 550 m²
The Damen Invasave 300 BWMS is a mobile ballast water treatment unit, designed for the reception and treatment of ballast water from ships. As such, it can be operated ashore or on board of a vessel receiving from or delivering water to a ship.

Damen InvaSave 300 uses mechanical filtration and ultraviolet radiation. The single-pass system is designed for external treatment of ballast water and achieves D-2 compliance directly upon discharge from the unit.

Damen offers high efficiency, wear resistant dredge pumps. Many different suction heads are available to fit any job.

The DOP pumps are well tested and available in many different designs. Together with partners, packages are developed to clean the seabed below the farms. The dredging pumps are available from stock for fast delivery.

DREDGING EQUIPMENT

SUITEABLE FOR
- Cleaning of the seabed
- Removal of fish excrement

DOP PUMP

Sizes
up to 80 metres
Production
up to 400 m³/h
Power
up to 400 bKW
Pipe Diameter
180 up to 450 mm
ENVIRONMENTAL SOLUTIONS
In addition to shipbuilding and ship design, Damen offers a network of 17 repair and conversion yards worldwide. With drydocks up to 420 x 80 metres, Damen handles 1,350 repair and maintenance jobs annually. The facilities are spread throughout Europe and in Singapore, South Africa, the Caribbean and the UAE, for your convenience.

This minimizes deviation, saves costs and increases your flexibility.
Damen has experience in converting cargo vessels into fish feed carriers. An example is the conversion of a Damen Combi Coaster, which was first shortened for better manoeuvrability within fish farms. Thereafter, the hold was fitted with 64 silos to enable the transport of different fish feeds. Furthermore, all required supporting installations were fitted to allow the vessel to successfully supply salmon farms with fish feed.

In order to transport a wide range of different fish foods, 64 compartments have been installed.

Damen has developed the concept of converting offshore vessels into live fish carriers. An example of this is the Live Fish Carrier 8916. Offshore vessels are well-suited for modification for the aquaculture industry as a result of their behaviour.

Both permanent and temporary designs can be applied to vessels originally built by Damen or other shipbuilding companies.
From the moment your vessel is ordered, Damen Services is on board from the very start. We offer a wide-ranging portfolio of customer support and after-sales services covering the vessel’s complete lifecycle.

Our family-owned driven values result in an approach where we do not “abandon ship” on our customers and support you every step of the way. Our diverse service portfolio helps you to achieve your goals of availability, reliability and lifecycle costs. Our global service network and 24/7 availability ensure a swift response.
A BROAD SCOPE OF VESSELS

Damen Shipyards Group operates 33 yards on 5 continents, employing over 9,000 people worldwide. Damen has delivered more than 6,000 vessels in more than 100 countries and delivers approx. 180 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, aimed at providing solutions to the entire spectrum of maritime sectors.

Vessels include tugs, workboats, naval and patrol vessels, high speed craft, dredgers, offshore support vessels, pontoons and superyachts.

For nearly all vessel types, Damen offers a broad range of services, such as maintenance, spare parts delivery, training and transfer of shipbuilding know-how. To complete, Damen offers a variety of marine components, especially nozzles, rudders, anchors, anchor chains and steel works.

In addition to ship design and shipbuilding, Damen Shiprepair & Conversion (DSC) offers a network of 17 repair and conversion yards worldwide, with 40 drydocks ranging up to 420 x 80 metres. Conversion projects range from adapting vessels to today’s requirements and regulations, to the complete conversion of large offshore structures. DSC handles 1,350 repair and maintenance jobs annually.