THE ULTIMATE SHIP-HANDLING TOOL

With its strong focus on safety, reliability, sustainability and efficiency, this is a vessel for now and for the future.
Innovative, yet with proven pedigree, the RSD Tug 2513 draws on successful, reliable solutions from the Damen portfolio, such as the ASD and ATD Tug series.
The RSD Tug 2513 is an answer to the increasing scale of cargo vessels, for example container ships. To meet the demands of the future, Damen has created a vessel that redefines the concept of compact agility, optimised to operate in both direct and indirect towing modes.
The combination of extreme length over beam ratio with high power introduces a new set of challenges. We have answered these based on our experience with the ASD Tug 2411 and the ATD Tug 2412, along with our thorough R&D programme. This enabled us to develop the new RSD concept, featuring the Damen patented Twin Fin for true directional stability, combined with an increased freeboard and a pronounced bow at each end of the vessel to cope with the significant forces generated.
Damen vessels benefit from broad knowledge gathered during ongoing research programmes within the Damen Group. Damen works alongside world-renowned research institutes, universities and companies.

The RSD Tug 2513 was developed with a strong emphasis on optimisation via computational fluid dynamics (CFD), notably with regards to directionally stable sailing behaviour in both directions.

Extensive validation tests were performed at the Maritime Research Institute Netherlands (MARIN), which provided input for both the development of this vessel and for the further progression of our Virtual Towing Tank programme.

Together with partners, Damen developed the WAAMPELLER, the world’s first Class-approved 3D printed propeller. The propeller was fitted and tested aboard a Damen Stan Tug 1606.
Realising that our customers have to outperform in their operations, Damen is committed to continuously improving its products and services.

The result is quality, based on knowledge, experience, a controlled production process and craftsmanship, from concept design to the smallest on board detail. Quality is a characteristic for which Damen tugs have long been renowned - a reputation we intend to maintain, now and in the future.

Our offer is a vessel that is simple to use, reliable to operate and easy to maintain. All of which means an asset which holds its value throughout its lifetime.
THE DAMEN RSD 2513 DESIGN IN DETAIL

The RSD Tug 2513 is an innovative vessel setting the new standard of technology within the tug market.

PRINCIPAL DIMENSIONS

- Length overall: 24.73 m
- Beam overall: 13.13 m
- Depth at sides: 4.95 m
- Draught aft: 5.50 m
- Displacement approx.: 525 t
- Power main engines: 4480 kW (6008 bhp) at 1800 rpm MTU 16V 4000 M63L
- Bollard pull ahead: 75 t
- Bollard pull astern: 70 t
- Speed ahead: 13 kn
- Speed astern: 12.8 kn
- Rudder propellers: Rolls-Royce US 255, 2700 mm
- Towing winch: Split drum 31 t pull and 175 t brake
- Speed: 40 m/min

MAST
Lightweight compact structure with folding option.

WHEELHOUSE
Integrated funnels for maximum visibility from the captain’s chair.

FIRE FIGHTING
Optionally equipped with main engine driven pump 600 m³/h, 1200 m³/h or 2400 m³/h (FIFI 1).

HULL PAINT SYSTEM
Tin-free anti-fouling. 5-year life-span.

DAMEN SAFETY GLASS
High impact resistance (cat. P3A). All-round visibility.

BULWARK
1.1 metre height for added crew safety.

THRUSTERS
Proven Rolls-Royce rudder propulsion with two 360 degree rotating fixed pitch propellers in stainless steel inner rings in the aft.

BOX COOLERS
Integrated box coolers with a closed freshwater cooling system.
WINCH
Low maintenance winch with seamless speed control.

OBSTACLE-FREE WORKING DECK
Open, clean deck layout with no obstructions for safe working conditions.

TOWING BITT
Excellent load-bearing capacity and facilitates smooth rope guidance, leading to less rope wear.

LOW AND EASY MAINTENANCE
Closed and integrated construction details result in reduced corrosion and easy-to-paint surfaces.

FENDERS
Optimised fendering system for impact absorption and force distribution.

ELECTRONIC STABILITY FEEDBACK
Know your limits

<12°  >12°  >17°

LOW FUEL CONSUMPTION
Fuel efficiency is aided by smooth hull lines and optimal water flows in any sailing direction.

TWIN FIN
For predictable sailing and high performance towing.
Paramount to safe operation are good, predictable handling characteristics. In the case of the RSD Tug 2513 this is enabled by the application of the Twin Fin concept, giving the vessel a solid base to lean on.

Damen tugs are designed according to the latest stability rules for tugs, setting new standards for safe operations, even before they enter into force.

The new shatterproof Damen Safety Glass is a valuable addition to the wheelhouse. The decks are spacious and uncluttered, while the high freeboard ensures that water is kept from the deck at all times.

The design of the RSD Tug 2513 incorporates safety in every detail. The tug is designed to get vessels - and all those on board - safely into port.
The five years in-depth R&D that Damen has carried out on the development of the vessel - both in-house and in collaboration with industry experts and clients - goes a long way in guaranteeing the vessel’s fitness for purpose.

The connectivity of the RSD Tug 2513 affords the opportunity to verify the status of your vessel(s) at any place and time.

This guarantees maximum uptime, enabling as it does, everything from the timely replacement of worn parts to full condition-based maintenance.

Though brimming with innovation, the RSD Tug 2513 is based on a series of standardised, proven systems and technologies used throughout the entire Damen tug portfolio, enforcing the benefits of Damen’s modular shipbuilding philosophy.
The sustainability of the RSD Tug 2513 is the result of an efficient hull design combined with energy saving measures, such as double-glazed windows, LED lighting and an emission reduction system, which makes the vessel modularly IMO Tier III certified.

In an effort to have a true impact on sustainability, Damen developed a modular selective catalyst reduction (SCR) system. This lowers the threshold for IMO Tier III compliance, which can be applied off the shelf at any stage of construction or as retrofit.

The RSD Tug 2513 also features extremely low levels of noise and vibration which comes courtesy of a flexibly mounted superstructure, engines and interior floors, 45 dB(A) silencers and double glazed windows with an argon filled gap acting as sound insulation.
The RSD Tug 2513 is based on the application of knowledge and experience gained via years of R&D, successive generations of vessel development and client feedback, translated into a truly efficient vessel. The result is a smart, yet simple concept, laid out logically for a smooth workflow and featuring optimised ergonomics for the captain and crew.

Leaning on its Damen heritage, the RSD Tug applies a wealth of modularity. This approach reduces both spare parts and maintenance requirements to a minimum, guaranteeing fitness for purpose.

This is also supported by remote monitoring, providing further alignment between vessel and shore. And, the commonality of the RSD Tug 2513 ensures that crew will be quickly familiar with any vessel from the series.

The always bow first principle offers the flexibility for the vessel to operate optimally as both a bow and stern assisting tug. At the same time, the Twin Fin skeg generates high towing performance at low engine power, resulting in low overall fuel consumption.

The Twin Fin also provides significantly improved manoeuvrability for ease of use in confined harbours.
Safety consciousness and efficiency are themes to be found running throughout the RSD Tug 2513, but it is on the spacious deck where they are perhaps at their most visible.

**SAFE SPACE**
The highest incident rates on board tugs are those associated with slippage and tripping. Here, Damen has taken every opportunity to reduce these risks to an absolute minimum. The result is a spacious, uncluttered working area with closed, smooth surfaces and omitting all equipment not essential for towing operations. Simple and effective.

Anti-slip paint on deck, coupled with a bulwark of 1.1 metres give crew confidence when working in all conditions.

**HIGH & DRY**
Based on the fact that the tug will always sail bow first, Damen has been able to create a higher freeboard. As well as improving seakeeping, this also guarantees there is never water on deck.

**A ROBUST WORKING AREA**
Stainless steel is applied to parts of the vessel that are vulnerable to wear and tear.
The vessel features a winch designed by Damen Winch Technology and built by Damen Marine Components. Applying the Damen philosophy of standardisation, the winch offers reliability and easy, fast maintenance. The winch is full flame zinc coated with an epoxy paint system on top and features just two grease nipples. All rotating parts have 5,000 hours of lifetime.

The winch is combined with a solid, variable speed, high torque hydraulic drive system enabling the captain to haul and veer the towing line at the highest speed possible for the force applied.
The RSD Tug 2513 focuses on maintenance and reliability. Utilising the wide hull, the engine room is extremely spacious and all equipment necessary for regular operation has been positioned above floor level within easy reach.

**ENGINE ROOM**

**THE HEART OF THE VESSEL**

The RSD Tug 2513 is powered by high speed, 1,800 rpm engines for fast acceleration.

**STANDARDISED SYSTEMS**

Damen has used standardised, modular systems with globally available components throughout, again ensuring any maintenance requirements can be met with the fastest possible response.

**RAPID ACCELERATION**

The RSD Tug 2513 is powered by high speed, 1,800 rpm engines for fast acceleration.

**QUALITY THAT LASTS**

Throughout the vessel, durable systems and components are used, matching the environment they operate in. Keeping seawater out of the engine room is of paramount importance to a reliable, durable operation. Therefore, on the RSD Tug 2513, cooling is taken care of with a closed fresh water cooling system, a proven method also to be found on all Damen tugs.

The exclusion of a ballast water system is a further example of this. This is made possible by a smart tank layout in combination with a hull form capable of safe operation at all loading conditions.
Full control of the engine room is possible from the wheelhouse and main deck when the tug is carrying out an operation, so that the crew can monitor the alarms and analyse any problem in maximum safety.
WHEELHOUSE

PREMIUM VIEW

Visibility from the wheelhouse is unrivalled in all directions, ensuring the operator of distraction-free control. Shatterproof Damen Safety Glass offers crew protection.

COMFORT AND ERGONOMICS

The wheelhouse has a focus on ergonomics, comfort and control. Ventilation is separated from the superstructure, ensuring almost no noise and vibration, minimising the risk of complacency.

A NEW SENSATION

The RSD Tug 2513 redefines master feeling. Minimal vibration and robust movement of the vessel provide a new dimension in towing.

KNOW YOUR LIMITS

The vessel features electronic stability feedback technology. This assists in assessing the limits of the tug to ensure safe performance. This is the first step towards the active stability system that Damen is developing.

EVERYTHING TO HAND

Next to the propulsion control, an integrated push-to-talk button connects to the VHF. When desired the winch can be controlled by foot pedals, facilitating all operational needs from a single position. With this vessel the captain can stay ‘hands on’ at all times.
The consoles and their display are the result of five years in-depth R&D and client feedback. The screens are clear, supporting the captain by showing only what he needs during operation, whilst allowing operators to select more detailed data when desired.
The interior of the RSD Tug 2513 is designed to offer a comfortable, safe working and rest environment with minimal noise and vibration and large windows to maximise daylight entry.

**A PLACE TO LIVE**
The presence of natural light is an important factor in making the crew feel at home. At the same time, darkening curtains are provided to ensure sleep during daytime when necessary.

**NOT FEELING THE VIBES**
The vessel’s superstructure is resiliently mounted, which means noise and vibration is reduced to an absolute minimum for extreme on board comfort.

**A PRIVATE SPACE**
The RSD Tug 2513 accommodation has been designed with no cabin to cabin connection to offer crew a private, independent space in which to relax in peace. Each cabin features its own sanitary provisions.
To ensure day to day crew comfort, Damen has paid very close attention to the accommodation areas, including the fine details.

Examples of this can be seen in the inclusion of telephone shelving and USB portals close to the beds to allow charging.
Damen has long kept a close eye on the increasing pace of digitalisation. Damen Digital is the gateway where all data from systems and equipment aboard Damen vessels is channelled.

This includes the remote monitoring of fuel consumption patterns. Remote monitoring can also shed light on equipment performance, to ensure the correct equipment is used for a given application.

Digital monitoring paves the way to more precise scheduled maintenance planning, extending the periods between maintenance based on accurate monitoring of, for example, fuel and oil quality.

Similar practice has had much success in the automotive industry where such in-depth knowledge of components and parts wear has led to demonstrable cost savings and maximised uptime. Damen is working closely with its clients in the development of Damen Digital.
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.

Our family 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.

MAINTENANCE MANAGEMENT SOLUTIONS
Our Maintenance Management Solutions (MMS) offer access to years of experience and knowledge, gathered together in one database. With this, we assist our clients with preventive maintenance, maximising uptime and minimising operational costs.

INNOVATION
We are always on the front line when it comes to effective, innovative solutions that make life easier. Examples include remote monitoring, a personal webportal for maintenance management, 3D parts printing and intelligent asset management.

YOUR PERSONAL 24/7 SUPPORT HOTLINE
Your first point of contact remains your dedicated Damen engineer. Additionally, for severe technical or safety issues, our 24/7 service number ensures you round the clock support. A Damen team of specialists is on stand-by to assist you until the problem is solved, to your full satisfaction.

WORLDWIDE SERVICE HUBS
Damen’s Service Hub network grew rapidly over the past years. At present there are more than ten hubs on five continents. We aim to enhance our services in regions without proximity to a Damen shipyard, but where Damen vessels are operating. Local presence enables our skilled engineers to respond faster than ever to client needs.

START-UP

SHIP DELIVERY
Through our worldwide service support network and knowledge of transport contracts, we offer comprehensive logistics to handle own-keel, heavy-lift, towage and semi-submersible transport deliveries.

WARRANTY SUPPORT
Our philosophy of building long-term relationships with our clients extends to providing excellent warranty support. During the warranty period, we regularly visit our clients to ensure satisfaction with our products. In the event of a problem arising, we are well placed to solve it swiftly.

DEPLOYMENT

FLEET SUPPORT
Our fleet support solutions mean you can concentrate on your core business. We help you in achieving a reliable performance through offering remote support, the use of technological developments and total life cycle support.

TECHNICAL ASSISTANCE
Damen Services delivers the technical assistance to ensure optimal performance throughout the entire lifecycle of your vessel. Our specialities cover problem solving, short, well organised docking periods and high quality maintenance and repair.

TRAINING
Our training programmes give our customers skilled, motivated and committed employees. This sustainable approach helps customers reach the all-important goals of reduced operational costs and improved vessel uptime.

PARTS
Damen Parts Services offers competitive prices and efficient deliveries. Over the years we have built up strong purchasing power and a considerable supplier network. Thanks to our network of global Service Hubs, we can guarantee short response times.

INTEGRATED LOGISTICS SUPPORT
Integrated Logistics Support (ILS) helps you to improve your liability, availability and maintainability of your fleet and assets.

GREEN
Our range of Green Solutions position us perfectly to assist in your efforts towards greater sustainability. Amongst our offerings are ballast water treatment systems and scrubber installations.

SERVICES PORTAL
The Damen Services Portal is an online platform that makes it easy for everybody involved in operating, maintaining and managing vessels to keep on top of their job.

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REPAIR & CONVERSION
Our established global sales network provides our customers with dedicated repair and conversion contacts to assist, whatever their requirements may be.

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HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME

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COLOPHON

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