



# DESMI Scrubber Pumps

Pump Solutions for Exhaust Gas Cleaning

PROVEN TECHNOLOGY

**DESMI**

# Proven Pump Technology

DESMI has manufactured pumps and pumping solutions for more than a century and we have many years of experience in pump manufacture for marine applications.

In recent years our expertise in pumps for scrubber solutions has increased significantly, which makes us a unique partner for delivery of pumps for scrubber systems for all types of vessels.

## DESMI Meets Requirements from IMO in Relation to SO<sub>x</sub>

DESMI scrubber pump solutions have been installed on board ships for many years and all pump installations are known for their high reliability and low maintenance costs including the high efficiency, which in most cases goes up to 85% and thus ensures you the highest efficiency in class.

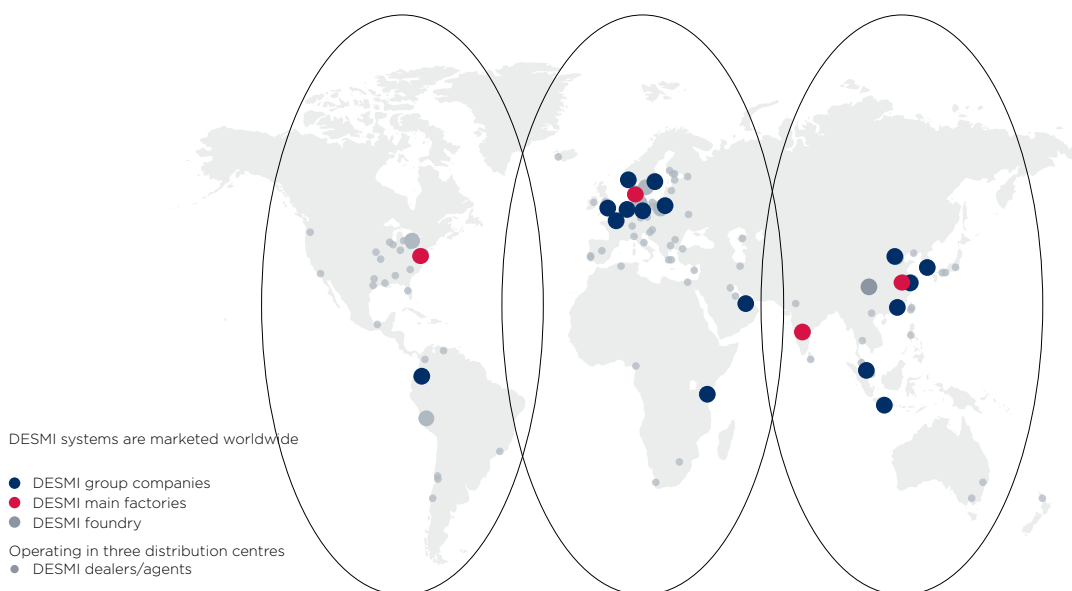
With offices, production facilities and foundry located all over the world you get a flexible and trustworthy supplier

of pump solutions who controls own supply chain and can deliver as many pumps as you want at the expected time of delivery.

Our experienced staff, our wellknown brand, and first-class service are recognised all over the world, which makes DESMI your natural choice when you are in the market for scrubber pumps that meet the requirements in relation to SO<sub>x</sub>.

Choose DESMI scrubber pumps and get:

- ✓ Highest efficiency in class
- ✓ Reliable scrubber pump solutions
- ✓ Many years of knowhow, and installations worldwide
- ✓ Short delivery time
- ✓ Competitive pricing



# NSL Vertical In-line Centrifugal Pump

The DESMI NSL stainless steel pump meets the special marine and industrial market requirements:

- Aggressive fluids
- Sturdy design
- High efficiency (up to 85%)
- Low NPSH values
- Easy installation/service

The pump is a vertical in-line, radially split, single-stage centrifugal pump with connecting flanges according to international standards. The pump is designed for mounting with electric motors having different international flange dimensions.

The NSL pumps in Super Duplex stainless steel are by far the best choice for use in applications where the pumped liquids are aggressive and/or polluted. The pumps can be used in both dry and wet scrubber systems including systems available in open-loop, closed-loop and hybrid arrangements.

All pump sizes are available as self-priming pumps by means of a separate built-on air-operated ejector priming unit or built-on priming pump, and can be delivered with high-efficient motors and frequency converters for efficient performance etc.



*Super Duplex NSL stainless steel pump for aggressive fluids.*



*The aggressive fluid will not damage the manometers thanks to the fitted membranes.*

# Centrifugal Pumps for Use in Scrubber Systems

## DSL

Vertical In-line Double Suction Centrifugal Pump DSL	
50 Hz:	60 Hz:
Pressure range: 2-86 mLC, 6-280 ft	Pressure range: 4-125 mLC, 12-410 ft
Capacity range: 300-5400 m <sup>3</sup> /h 1300-23000 US gpm	Capacity range: 350-5400 m <sup>3</sup> /h 1500-23000 US gpm
Temperature range: Max. 60°C - 140°F, sea water Max. 120°C - 248°F, fresh water	
Applications - besides scrubber systems: Ballast and cooling water pumping are among the many tasks that the DSL pumps solve to perfection.	
Materials: Pumps available in bronze (NiAlBz) and super duplex stainless steel.	

### DSL benefits:

- Suction design provides a perfect flow
- High efficiency and low NPSH values



DSL

## NSL

Vertical In-line Centrifugal Pump NSL	
50 Hz:	60 Hz:
Capacity range: 10-1500 m <sup>3</sup> /h - 50-6600 US gpm	Capacity range: 10-1800 m <sup>3</sup> /h - 50-7900 US gpm
Pressure range: 5-150 mLC - 15-500 ft	Pressure range: 5-220 mLC - 15-720 ft
Temperature range: With standard mech. shaft seal max. 80°C - 176°F With special mech. shaft seal max. 140°C - 284°F	
Applications - besides scrubber systems: Various marine applications such as seawater cooling systems, LT-cooling systems, HT-cooling systems, ballast water pumps and fire pumps.	
Materials: Pumps available in bronze (NiAlBz) and super duplex stainless steel.	



NSL

### NSL benefits:

- High efficiency
- Low NPSH values
- Easy installation/service
- Various materials

## ESL

Vertical In-line Centrifugal Pump ESL	
50 Hz:	60 Hz:
Capacity range: 2-135m <sup>3</sup> /h 9 - 600 US gallon/minute	Capacity range: 2-160m <sup>3</sup> /h 9 - 660 US gallon/minute
Pressure range: 2-45 mLC 6,5 - 150 ft	Pressure range: 3-65 mLC s 10 - 210 ft
Liquid temperature range: With standard mech. shaft seal max. 80°C - 176°F. With special mech. shaft seal max. 140°C - 284°F.	
Applications - besides scrubber systems: Various water applications such as hot water circulation, fresh water circulation, refrigeration, HVAC, hydrophore pump, cooling water.	
Materials: Pumps available in bronze (NiAlBz) and super duplex stainless steel.	

### ESL benefits:

- Low NPSH values
- Compact design
- Easy installation
- Low maintenance costs



ESL

# Automation Solutions



DESMI Automation offers a wide range of automation solutions developed for the scrubber industry.

Our product portfolio covers solutions from simple motor control centres to advanced PLC based solutions.

DESMI Automation is constantly developing new product solutions, and currently the following products are offered as standard products:

- Motor control centres
- Frequency converter solutions 0.75 kW to 1 MW (in various voltage ranges)
- Scrubber control systems
- Energy-saving solution to free upload on GEN-SET
- Power quality management, called OptiPower

DESMI Automation offers customized solutions for advanced pump systems.

Our automation team currently consists of 25 skilled automation engineers and technicians located in Denmark, Poland, Singapore, Korea and China.

DESMI Automation handles technical clarification, design, programming, installation, commissioning, and service.

Automation solutions are developed according to specified rules and regulations, UL standard, EN/IEC standard, ATEX/IECex standard and all major marine classification societies.

DESMI frequency converters with the following special features:

- ✓ Designed for harsh marine environment
- ✓ Design temperature up to 50°C without de-rating
- ✓ Marine coating of circuit boards (3C3)
- ✓ Internal components are ruggedized
- ✓ Two inbuilt DC chocks for reduction of harmonic distortion
- ✓ IP54/55 drives designed for installation in engine room
- ✓ Type approval from the nine (9) leading class authorities (DNV-GL, RINA, BV, RMRS, ABS, LR, CCS, Class NK and KR)



## Developed, Produced, and Marketed under the ISO 9001 Quality Certification

DESMI pumps for scrubber systems are developed, produced, and marketed under the ISO 9001 quality certification and satisfy all quality requirements as specified by customers.

DESMI products are of such a quality that they are considered reliable, functional and of a good design.

DESMI products are designed in such a way that they comply with existing legislations.

Within the shipping industry we can also deliver a DESMI product appendix to the Ships' Green Passport. Health & Safety on board the ship during operation, repair, conversion and recycling are key concerns to DESMI.

The product quality, our ability to adapt, and a high technology level guarantee our customers a partner and a serious problem solver who offers recognised and durable products.





Need more information or specifications? Contact us at [desmi@desmi.com](mailto:desmi@desmi.com) or read more about DESMI and DESMI's other products and solutions at [www.desmi.com](http://www.desmi.com)

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