



# DESMI Cargo Pumps

Deepwell Cargo Pumps for LPG, LEG, Chemical and CO<sub>2</sub> Tankers

PROVEN TECHNOLOGY

**DESMI**

# DEEPWELL PUMPS

The NDW pumps from DESMI are energy-efficient and well-proven for pumping every media from LPG, to LEG over a wide range of chemicals, through to CO<sub>2</sub>. The pump consists of three main components: base arrangement, pipe and pump cylinder. The cylinder is designed with a variable number of impellers and casings to meet the required head and capacity.

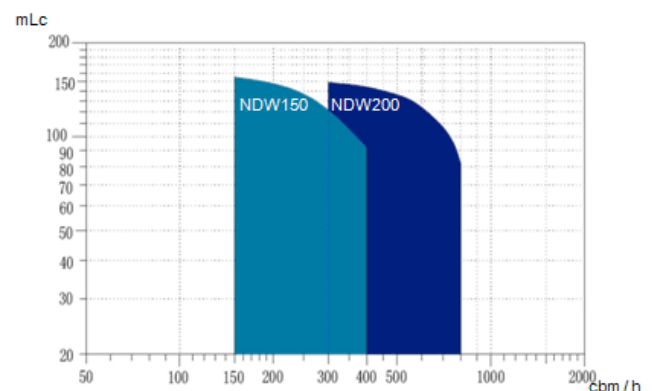
The pipe stack consists of a number of intermediate pipes in which the cargo is transported to the outlet

flange of the base arrangement. The intermediate shaft, which drives the impellers, is placed in the centre of the pipe stack. The shaft is supported by guide bearings for each 1.2 metres / 4 ft, which is also the length of the intermediate pipes in the pipe stack. The bearings are made of carbon and are lubricated by the cargo.

The NDW pumps are available in two sizes and the below diagram guides you to the correct choice.

## Deepwell Cargo Pumps for LPG, LEG, Chemical and Co2 Tankers

- Materials  
Stainless steel AISI 304 or similar for cargo temperatures down to -104° C.  
  
Stainless steel AISI 316L for special requirements.
- Optionals  
Drain pipe from pump head to pump cylinder for propylene oxide service  
Intermediate support when pump exceeds 18 metres



Capacity: 100 - 600 m<sup>3</sup>/h / 440-2642 gpm

Pressure: 0 - 150 mLC / 0 - 492 ftLC

Temperature: -104°C - +50°C / -155°F - 122°F

## Boosting Capabilities

The booster pumps are placed on the deck and are used in series with the NDW pumps in order to obtain a higher total pressure of the cargo at the ship's manifold.

The booster pumps are single-stage centrifugal pumps available in variable sizes according to requirements.



## Technical Specifications Booster Pumps

Capacity: 60 - 600 m<sup>3</sup>/h / 264 - 2642 gpm

Pressure: 0 - 140 mLC / 0 - 459 ftLC

Temperature: -104°C - +50°C / -155°F - 122°F

## Quality product

Making a quality product that meets your requirements is not enough to secure a successful installation.

DESMI has wide experience with managing various projects such as entire pump systems for aircraft carriers, fire fighting system pumps for nuclear submarines in dock, and large-scale on-shore installations. These project management skills ensure that your expectations are met.



The process is divided into six stages.

For each individual stage we have defined the documentation and communication required and trained our staff accordingly. This ensures a satisfied customer throughout the project.

# Cargo Pumps

## Base Arrangement

### Known techniques

- Shaft seal, bearings and coupling are similar to already installed deepwell pumps
  - Balanced pressurized sealing system
  - Secures reliability as proven technology is used
- Known techniques for critical parts

### Mounting and discharge flanges as "Industry Standard"

- Similar to other manufactures
- Allows for interchangeability and new retrofit opportunities
- Customized connections available

### Serviceability

- Easy replacement of main components
- Static gas seal allows safe replacement of mechanical seal

### Main components are cast

- Discharge top piece, motor stools, bearing housing and shaft seal housing
- Means higher efficiency, more rigid design
- Fewer machined parts equal easier assembly

## Pipe Stack

### Intelligent intermediate shaft couplings

- Eliminate need for anti-rotation device

### Halfway connection allows shipment in two halves

- Most assembly will be made by our trained staff and not at the site
- Saves installation time and secures correct assembly

### Main components are cast

- Tripod bearing spider
- Intermediate distance 1.5 metres
- More rigid design

## Pump Cylinder

### Higher performance and NPSHr repeatability

- Optimized design

### Semi-axial impellers

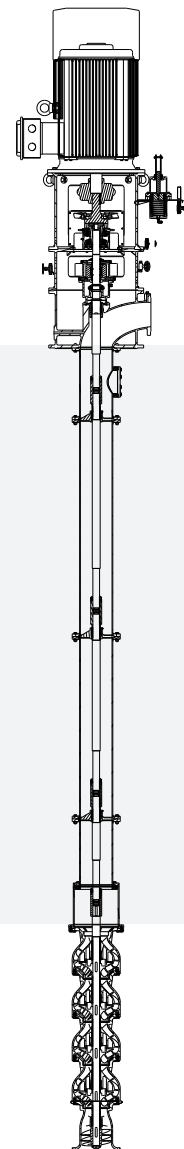
- Smoother flow patterns resulting in a higher efficiency
- Smaller motor required

### Main components are cast

- Inducer and inducer housing
- Impeller and impeller housing
- Meaning smoother bends and angles
- Higher efficiency means smaller motor

### Bell house connection to pump shaft

- Easy maintenance and replacement secure reliability



# TYPE APPROVAL CERTIFICATE

The Deepwell Cargo pump NDW has received type approval certificate

**Requirements:**

- BUREAU VERITAS Rules for the Classification of Steel Ships
- IGC Code
- IACS Unified Requirements G3 as amended

DESMI offers consultancy in supplying complete systems for deepwell pumps. All our solutions meet international and national regulations.





Quotation

Order

Delivery

Warranty

Service

Decommissioning

## Quotation

- Selection Program
- Technical Quotation
- Product Brochures
- Data Schedule
- Detail of QA Assessments
- Example Documentation
- Performance Curves

## Order

- Change Log
- Change Control
- Production Schedule
- Monthly Progress Report
- B O M
- Certified Drawings
- Material Certificate (3.1. B)
- I.L.S Information
- Green Passport
- Manufacturing Quality Control Plan
- F.A.T Procedure
- F.A.T. Report
- Certificate of Conformity

## Delivery

- Commissioning & Installation Instructions
- Operating Instructions
- Repair & Maintenance Instructions
- Maintenance Plan
- Special Tools List
- Tool Box
- Certification
- Packing, Handling & Transportation Plan
- Commissioning Spares
- Class Spares
- Stock List
- Manufacturing Records

## Warranty

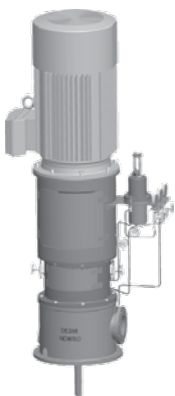
- Service Agreement
- Technical Support
- Spares Availability

## Service

- Service Plan

## Decommissioning

- Technical Support
- Disposal Instructions
- Lead Times for Direct Replacement



Base Arrangement



Pipe Stack



Pump Cylinder

DESMI offers consultancy in supplying complete systems for deepwell pumps.

All our solutions meet international and national regulations.  
Mounting and discharge flanges as "Industry Standard"

The systems allow for interchangeability and new retrofit opportunities.

Skid mounted  
Preassembled from factory  
Customized connections available

Well-known and proven technology  
Hydraulics used in thousands of other pumps

Balanced pressurized sealing system  
Surface treatment for harsh environment

Capacity: 100 - 600 m<sup>3</sup>/h  
440 - 2642 gpm  
Pressure: 0 - 140 mLC  
0 - 459 ftLC  
Temperature: -104°C - +50°C  
-155°F - 122°F



DESMI Booster pump



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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