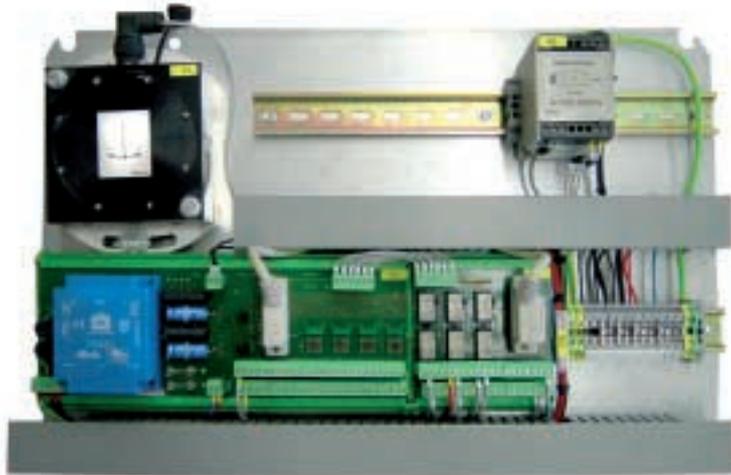


## Components

### INCLINOMETER:

Mounting plate with power supply, system interfaces, a high resolution pendulum sensor for precise control of the heeling compensation, etc.



### LEVEL SWITCH

Heavy design to fulfil the requirements for the marine application. The flow switch is used as dry running protection for the pump.



## HOPPE Bordmesstechnik GmbH

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### Cargo Handling Systems

- Tank Content Measuring
- Bunker Safety
- Overflow Safety
- Draught Measuring
- Water Ingress Detection
- Valve Remote Control
- Ballast Exchange
- Loading Computer

### Motion Control Systems

- Anti Heeling
- Stability Test
- Anti Rolling
- Parametric Roll

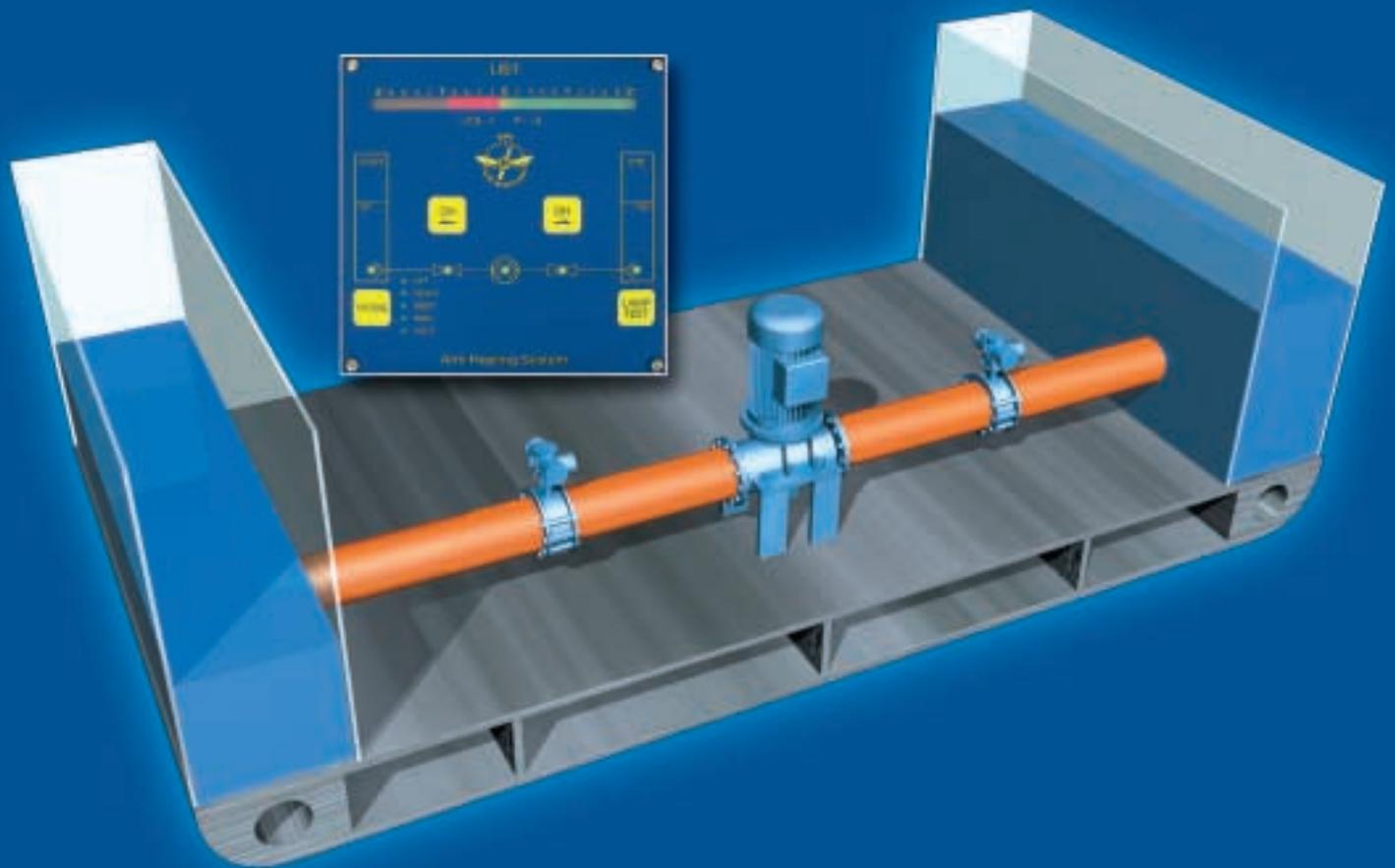
### Monitoring Systems

- Torque Power Meter
- Ship Speed Meter
- Performance Monitoring
- Hull Stress Monitoring

### Integrated Solutions

## Anti Heeling System

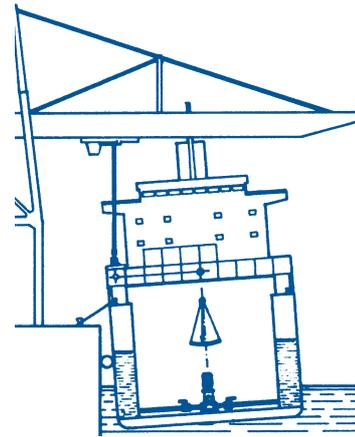
HOHEL



## System

The Anti Heeling System enables continuous loading or unloading for container vessel, RoRo carrier and similar ships in much reduced time. The heeling compensation is automa-

tically achieved by continual measurement of the heeling angle. Controlled by the AH MIP reversible axial or centrifugal pumps are transferring the water between the heeling tanks.



### RELIABILITY

Many years of experience in the field of measurement with the use of modern microprocessors using well tried and tested engineering, form the solid basis for our Anti Heeling Systems.

### EASY HANDLING

The clear visualisation of the system makes it easy to operate the Anti Heeling System.

### FLEXIBILITY

The system is free programmable what means that the system can be easily changed to meet different requirements. In the manual mode special operations like pre-heeling for heavy cargo or crane loading can be realised.

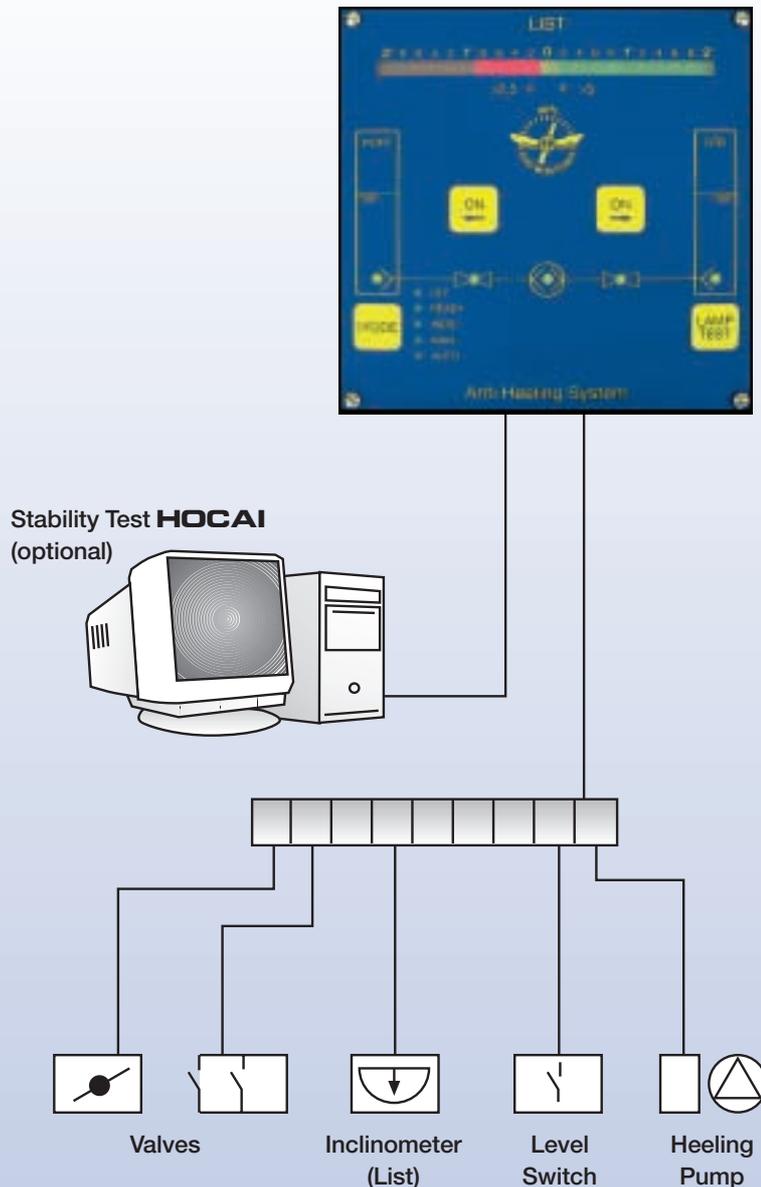
### STABILITY TEST

With the Anti Heeling System connected to the Hoppe **HOCAL** System it is possible to carry out an inclining test to determin the actual ship stability.

### TYPE APPROVAL

The system and electronic components are type approved by:

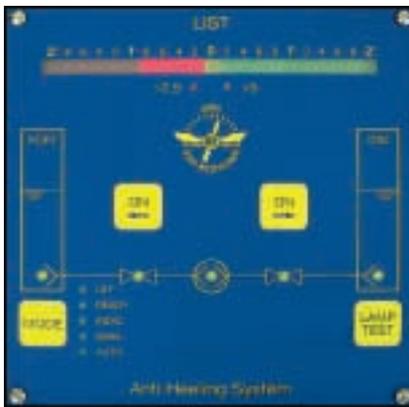
- Germanischer Lloyd
- Lloyd's Register of Shipping



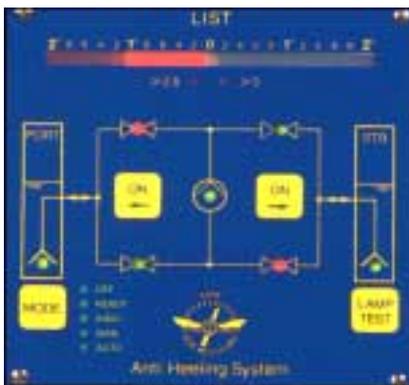
## Components

### AH MIP

The electronic unit is based on a micro computer system and installed in a box for console mounting with the dimensions of 144x144 mm. The box is covered by a front panel with mimic diagram, integrated indication light diodes and operating push buttons.



2 valves system



4 valves system

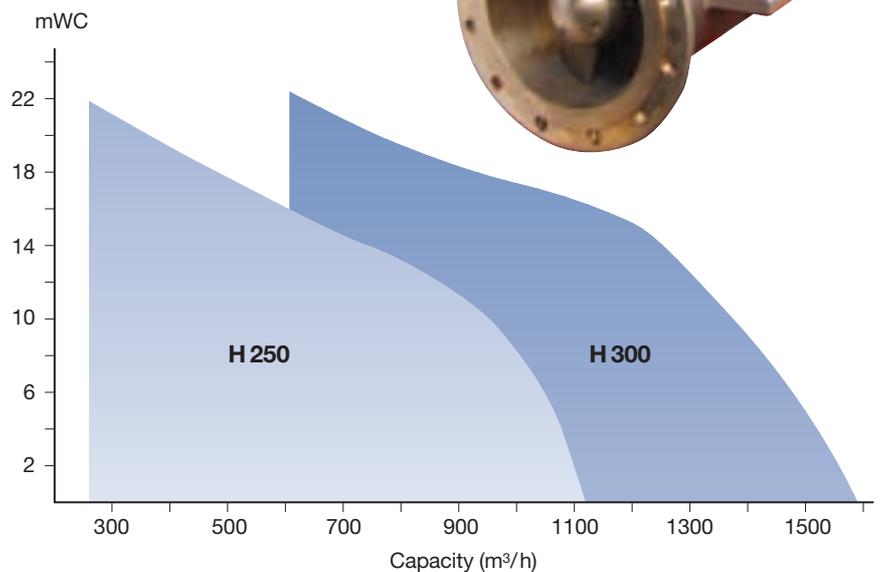
### PUMPS

The Hoppe Anti Heeling Pump is an axial reversible type. Two different sizes of pumps are available:

Type <b>H 250</b>	300-800 m <sup>3</sup> /h
Type <b>H 300</b>	700-1400 m <sup>3</sup> /h

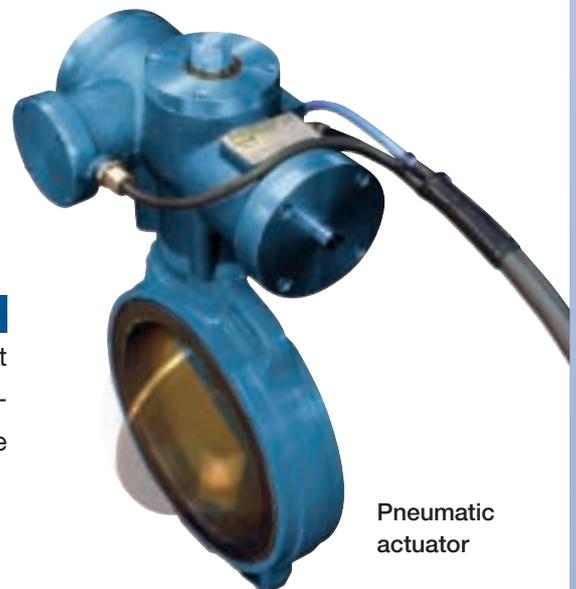


Working Range (60 Hz):



### VALVES

Depending on the system different types of hydraulically or pneumatically operated actuators can be provided.



Pneumatic actuator