

# ABB Marine Academy course description

## H881 – Azipod® V technical training

### Course goal

This course provides a deeper understanding of the Azipod propulsion systems, and how to operate, maintain and troubleshoot the system components.

### Learning objectives

Upon completion of this course the participant will be able to:

- describe the functions of the different Azipod V\* sub-systems and how they interact
- understand the importance of correct maintenance
- understand the monitoring possibilities and how to troubleshoot the discussed systems
- perform adjustments on critical system components e.g. hydraulic steering gear pump and EMRI servo unit

### Contents

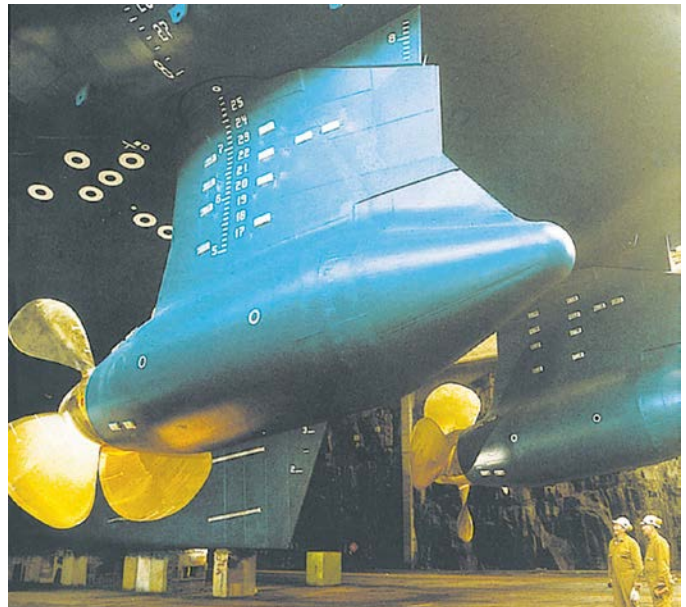
- Safety procedures while working on the Azipod
- Terminology and evolution of Azipod propulsion
- Basics of Azipod hydrodynamics
- Sub-systems, maintenance and conditioning monitoring
- Power, liquid and data transmission system
- Encoder signal fault tracing
- Hydraulic steering gear
- Hydraulic pump settings and monitoring (inner control loop)
- The servo unit settings
- Steering angle feedback assembly and adjustment (outer control loop)
- Remote control vs. local control
- Review of Azipod unit space safety
- Azipod vessel operation basic

### Methods

Lectures and demonstrations  
Workshop exercises with demo equipment  
Visits to machine factory and Azipod propulsion unit assembly factory

### Student profile

Marine engineers and electro-technical personnel at operational and management level



### Prerequisites

Marine power plant basic for technical staff in ABB propulsion and Azipod space safety or similar knowledge is advisable

### Duration

5 days

### Venue

Helsinki, Finland

### Additional information

Minimum 6, maximum eight participants  
On-site training on request

\*Previously called "Large Azipod"

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## Course outline

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Azipod® is a registered trademark of ABB.

#### Day 1

Course overview  
ABB marine systems overview  
Electrical machines  
Visit to machine factory

#### Day 2

Azipod propulsion evolution Main mechanical componets  
Azipod propulsion systems  
Power and data transfer technology including exercises  
Power drive control interface including exercises  
Visit to Azipod unit assembly factory

#### Day 3

Steering gear system including exercises

#### Day 4

Remote control system  
Exercises on joystick simulator  
Propeller hydrodynamics  
Steering Steering gear control unit – EMRI servo including exercises

#### Day 5

Steering gear monitoring technology  
Azipod propulsion unit space safety discussions  
Exam and course evaluation