

# FRAMO COURSE

## INTRODUCTION

FRAMO cargo pumping system is increasingly being fitted on chemical tankers, product carriers and tankers. In order to ensure efficient and safe operation of this type of hydraulic cargo pumping system, a sound knowledge regarding its functioning is imperative. This course familiarizes the participant with all aspects of the system and enables them to operate it safely and efficiently. The participants are exposed to the layout of the hydraulic circuit, explanation of the working of the power packs, oil cleanliness aspects and its importance, troubleshooting aspects - dealt with logically, systematically and in detail; the various safety features of the circuit - various alarms / trips and the emergency overrides.

The working of centrifugal pumps in parallel and in series along with the capacity curves of the pumps and their interpretation for optimal cargo discharge is undertaken. Stripping operation, cargo pump evaluation curves, purging of cofferdam and analysis of purging results along with the use of the emergency portable pumping equipment also forms a part of this course.

The construction of the cargo pump is also covered in detail and various basic maintenance procedures (renewal of wear rings and cargo seals) explained. This course provides a forum for theory lecture delivery, training and group discussions leading to improvement in competency and confidence in handling the FRAMO hydraulic and cargo equipment.

## OBJECTIVE

1. Enable participants to understand the fundamental concepts of hydraulics.
2. Understand the working of the FRAMO hydraulic circuit and the components therein.
3. Various safety devices and emergency overrides.
4. Safe & efficient operation of the FRAMO cargo pumping system and pump.
5. Carry out overhaul / repair on Cargo pumps and system.
6. Learn from sharing of experiences amongst participants.



## DETAILS

Duration	: 2 Days
Eligibility	: Any seafarer
No. of Participants	: Minimum Two
Course Facilitator	: Experience Chief Engineer
Course Venue	: ARI, Delhi

## FEATURES

- Advantages and fundamental concepts of hydraulics
- Hydraulic system Components and their symbols (ISO 1219)
- Axial Piston hydraulic pumps — types and working principle
- Detailed operational description of the FRAMO pumping system
- Speed Control Valves — operation and troubleshooting
- Cargo pump construction, operation, stripping and performance evaluation
- Hydraulic oil, contamination, cavitation and filters along with Oil Analysis
- Purging of Cofferdams, routines and analysis of results
- Cargo pump performance curves
- Use of emergency portable pump
- Planned maintenance
- Safeties while handling Hydraulic systems
- Injuries while working on hydraulic systems

For Course Booking and Schedule please email us at [coursebookings@ariworld.com](mailto:coursebookings@ariworld.com)

ARI will be pleased to work with companies for customized courses.

Companies can opt for Block Booking.

For more information email us at [info@ariedu.com](mailto:info@ariedu.com)