

Contact for Spanish Speaking Countries:



llalco
Fluid Technology

Llalco Fluid Technology, S.L.
Torre de Cristal Planta 18
Paseo de la Castellana 259C
28046 Madrid. SPAIN
T. +34 91742 3057
E. llalco@llalco.com
www.llalco.com

PROTECTING MARINE LIFE

ENVIRONMENTALLY FRIENDLY
BALLAST WATER TREATMENT

In compliance through
simple and flexible solution



About us

- Norwegian company established in 1994
- Offices in Norway, Japan, China, Singapore, Bulgaria, The Netherlands and USA
- Warehouses in Norway, Luxembourg, Singapore and USA
- Global service network
- IMO Type approved since 2009
- USCG approved since 2016
- More than 1000 systems sold
- Norwegian design – produced in Europe



Key approvals in place

Type approved by



Ex certified by



Tested by



DA



DA



DA



TA



TA



TA



TA



TA



TA = Type Approval
DA = Rules for Classification of Ships

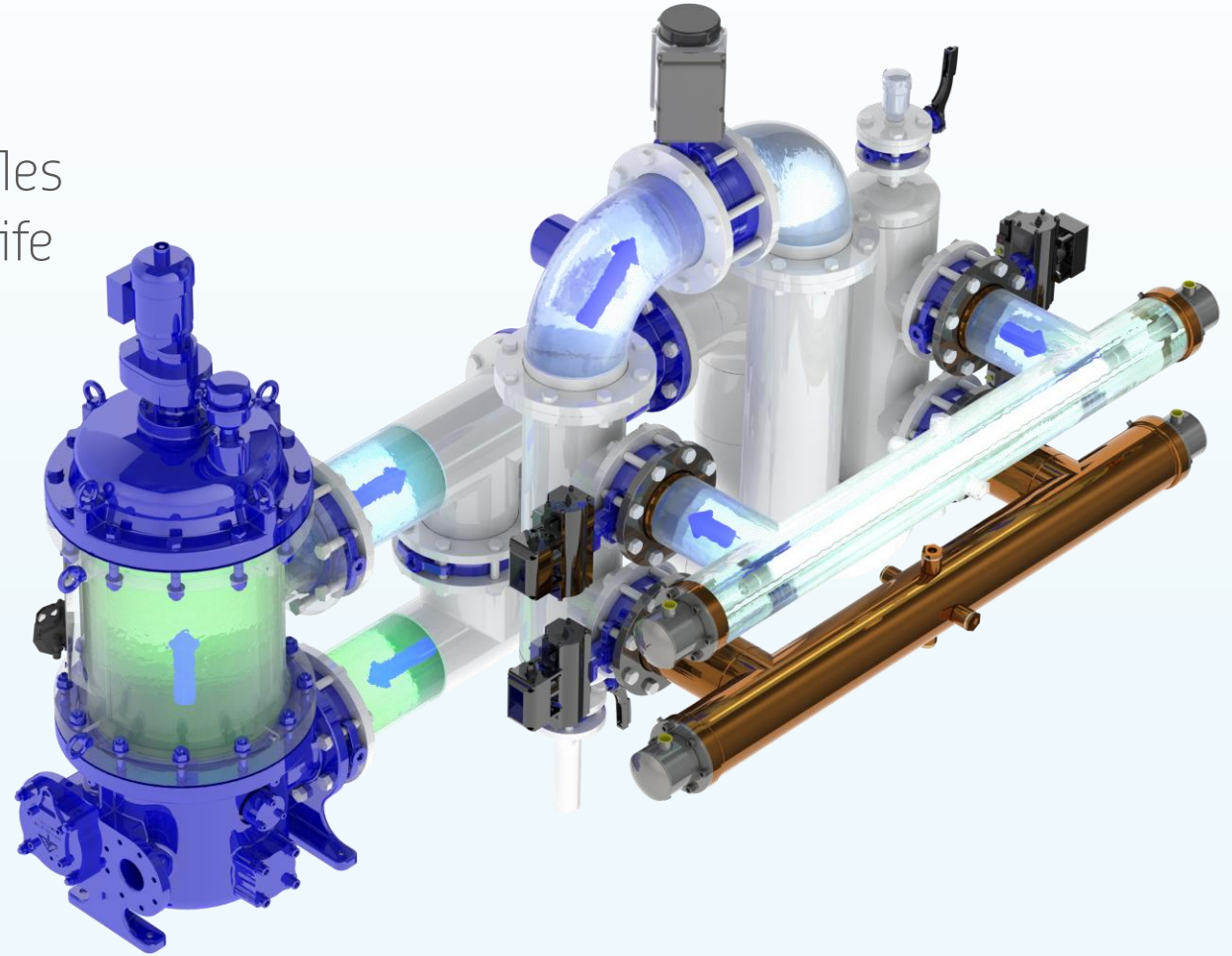
Optimarin Ballast Process

Ballasting

- Filtering removes large organisms / particles
- UV treatment neutralizes and inactivates life

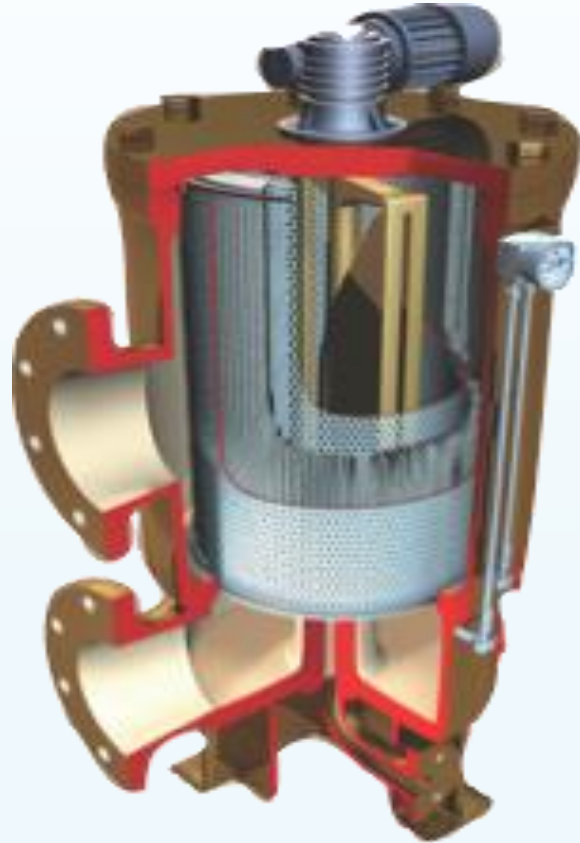
De-Ballasting

- Bypasses filter
- Second UV treatment eliminates any remaining organisms and ensures complete compliance

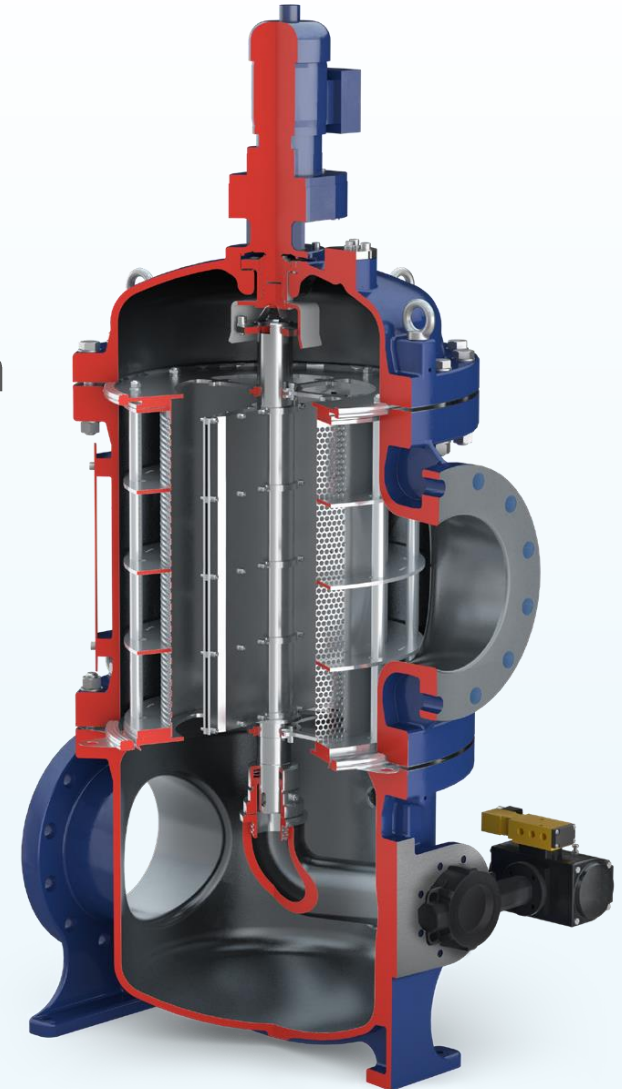


Filters

Filtrex
Basket type



Boll & Kirch
Basket type



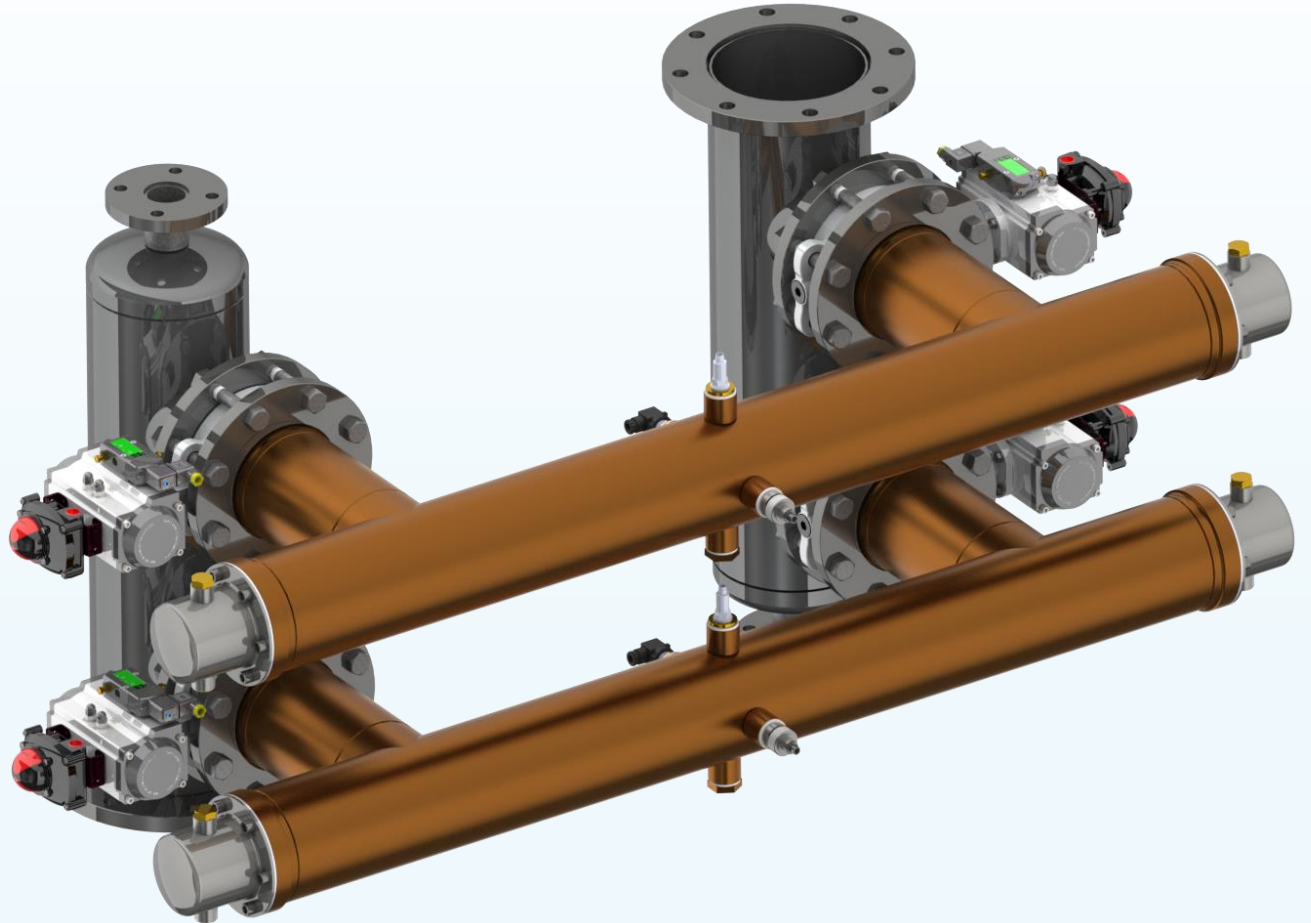
Flexible UV system

Redundancy

- One UV lamp per chamber
- Each chamber handles from 10 m³/h to 167 m³/h
- Maximum capacity 3000 m³/h

Flow control

- The system allows the flow to be controlled, ensuring compliance for all water salinities*



*Marine-, Fresh- and Brackish water

Advantages

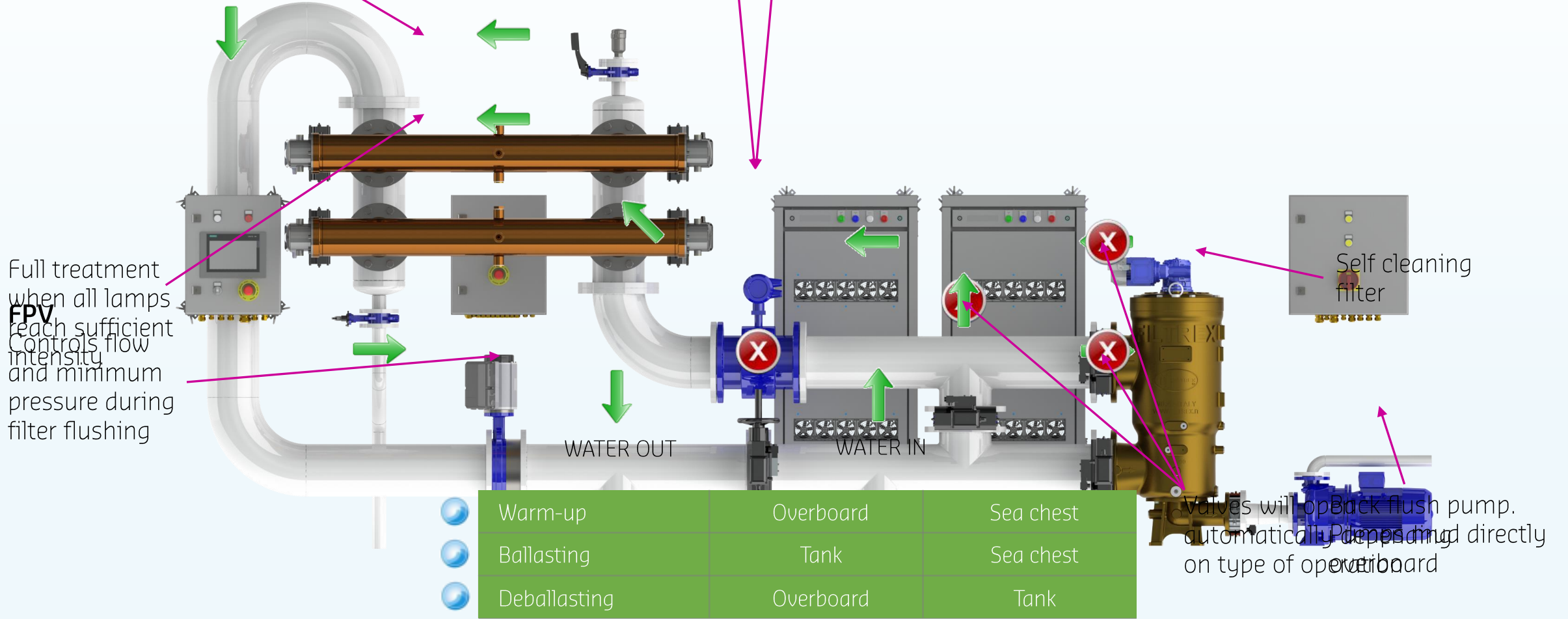
- Low documented OPEX based on extensive operational experience
- Easy to maintain
- Cost efficient installation
- Flexible installation options
 - modular system
- Fast track deliveries
- Turn-key solutions
- Power efficient
- Operational redundancy
- Vessel specific document package from project start



High power UV lamps (35 kW each) requiring water cooling

Alarm initiated if flow drops start below 10 l/min (10 gpm/lamp)

The Optimarin Ballast System



The Optimarin Ballast System

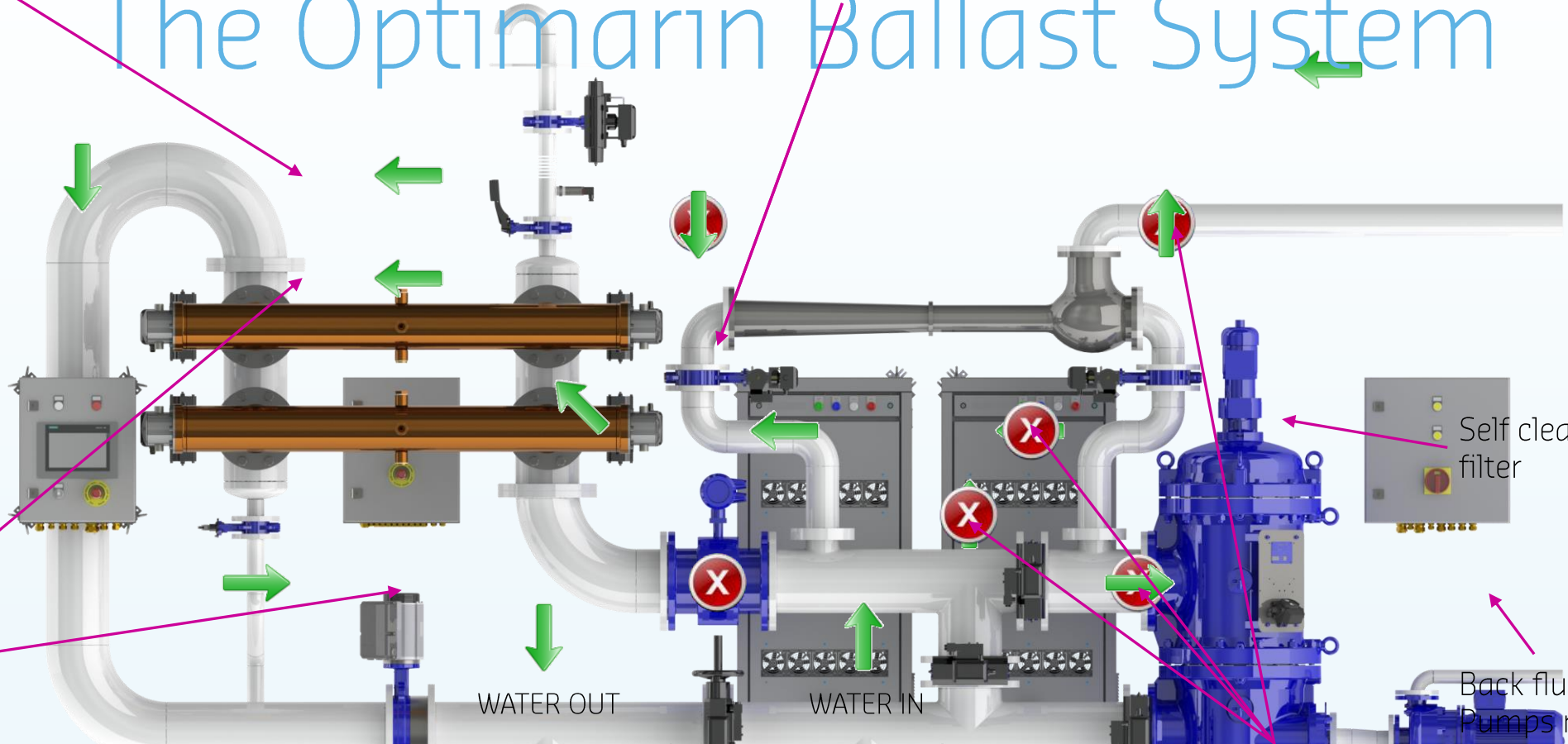
High power UV lamps (35 kW each) requiring water cooling

Flow initiated UV lamp start (min 10m³/h pr. lamp)

Alarm activated if flow drops below 10m³/h pr. lamp

Stripped ballast water

FPV
Controls flow
Full treatment when all lamps reach sufficient intensity and minimum pressure during filter flushing



● Warm-up	Overboard	Sea chest
● Ballasting	Tank	Sea chest
● Deballasting	Overboard	Tank
● Stripping	Overboard	Drive water

Valves will open overboard automatically depending on type of operation

Installed in a wide variety of vessels



Broad range of customers



OBS 500 BK



Saga 1000 m³/h

New building programme of 11 vessels. Systems installed at yards in South Korea and Japan



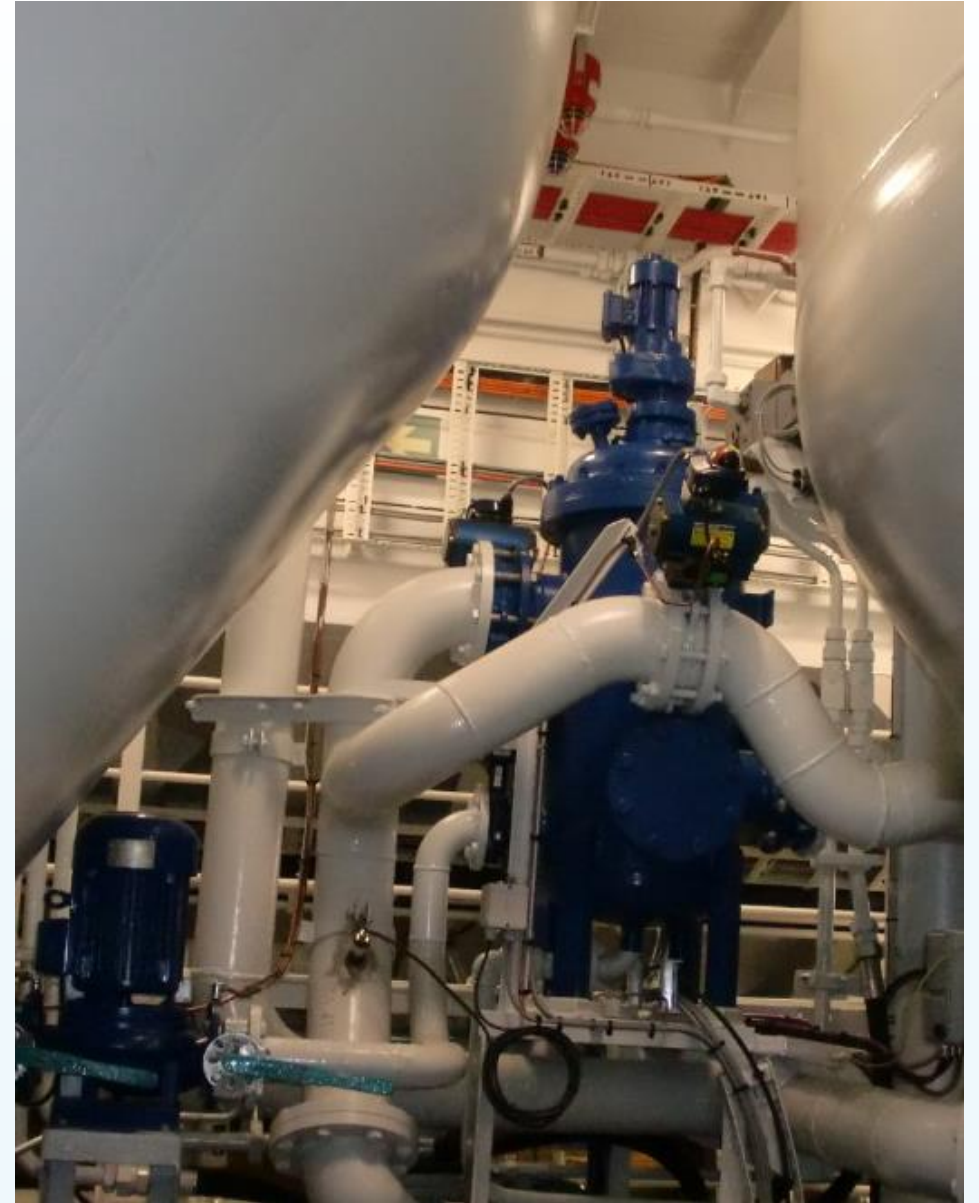
Evergreen 1000 m³/h

New building programme encompassing 30 vessels. Systems installed at shipyards in South Korea and Taiwan.



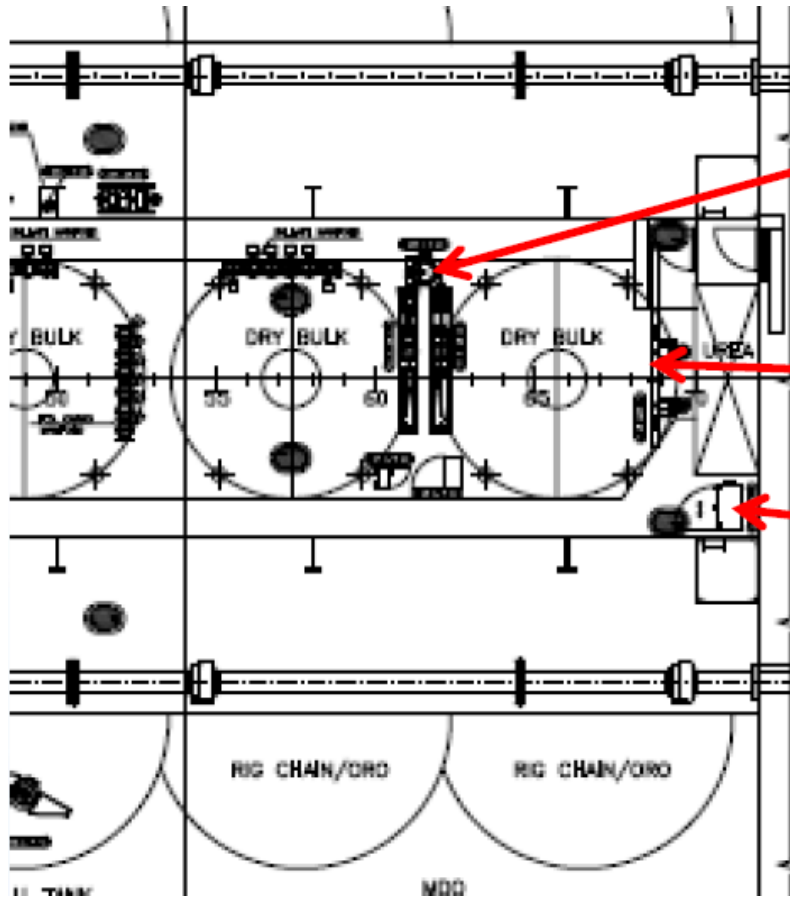
Siem Offshore

New building programme with
two vessels constructed in
Norway



Siem Offshore

Installed at yard

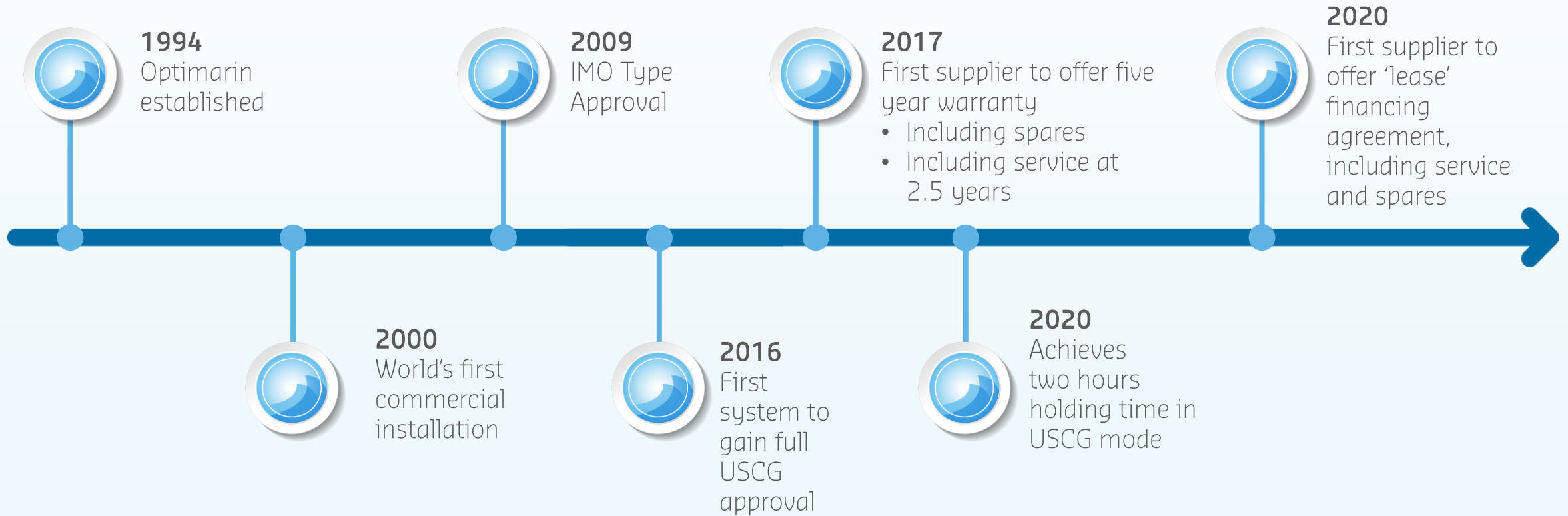


Filter

UV Chamber

UV Power Cabinet

Optimarin – first for BWT



Contact for Spanish Speaking Countries:

Thank you for
your attention!



llalco
Fluid Technology

Llalco Fluid Technology, S.L.
Torre de Cristal Planta 18
Paseo de la Castellana 259C
28046 Madrid. SPAIN
T. +34 91742 3057
E. llalco@llalco.com
www.llalco.com

