

RETROFIT PROPULSION CONTROL SYSTEM UPGRADE



All ships need a safe, reliable and easy-to-use control system for manoeuvring. Wärtsilä has years of experience in making control systems.

WHAT IS A RETROFIT?

A retrofit is an upgrade of an existing remote control system, an upgrade of the mechanical parts of the propulsion controls system or a combination of these two. A retrofit optimises the entire installation resulting in better accuracy and an up to date system.

WHY RETROFIT?

After being in use for years, the elements of a control system wear out and age as well as spare parts becoming obsolete and scarce. This causes unexpected maintenance and repair periods, resulting in high operational costs and off hire.

A new remote control system can contribute to considerable savings:

- Decrease in fuel consumption by optimum scheduling of pitch and shaft speed
- Reducing maintenance costs by avoiding too quick loading and unloading of machinery for running-up/down

- Wave filter: more effective load control reduces wear of the engine and propulsor

WHY WÄRTSILÄ?

- Over a century of experience in the shipping industry
- Integrated know-how of propulsion systems, engines and control systems
- Large installed base
- Both Wärtsilä and other OEM's
- Reliable, cost-effective and environmentally sound solutions
- Global network
- Lifetime service support

PROPULSION CONTROL SYSTEM UPGRADE

A control system consists of a control panel, bridge and ECR panels, actuators and sensors. The following updates are possible:



- Replacement of the entire control system including panels
- Replacement of only the control cabinet
- Hydraulic system upgrade or replacement
- Digital system upgrades
- Upgrade as part of a propulsion improvement package
- Mechanical upgrade or replacement of the OD box
- Mechanical upgrade of pitch positioner
- Mechanical upgrade by means of new hub design and/or blade design (propulsion improvement)
- Upgrade by means of high efficiency nozzle (propulsion improvement)



■ ■ ■ **OUR PRODUCTS: LIPSTRONIC 4000 BASIC AND LIPSTRONIC 4000 EXTENDED**

LIPSTRONIC 4000 BASIC

The Lipstronic 4000 basic control system is a standard system for a single propeller driven by a single engine combining maximum flexibility with low cost.

LIPSTRONIC 4000 EXTENDED

The Lipstronic 4000 extended is specially developed for ships demanding a growing number of functions. The system is applied in case of: twin engine drive, slow running main engine, joystick or D.P. operation, different operation modes and on-board local area networks.

FEATURES

- Compatible replacement system for all installed Lipstronic control systems (such as Ancos 2000 and 4000)
- Compatible replacement for control systems from other OEM such as Kamewa, Escher Weiss, Berg, Asea etc.
- Single source solution for all propulsion systems: Controllable pitch propellers, Waterjets, Steerable thrusters, Transverse



- thrusters, Rudder control system & Joystick system
- Control system in line with IMO regulations and all classification societies
- Standardization of components
- Tailor made solutions
- At least same functionalities, possibility to add new functionalities (for example wave filter)
- Reliable and easy to use
- Easy installation:
 - existing ship wiring can be used if in good shape
 - cabinet is tailored to fit in existing space
 - plug and play module
 - afloat during (un)loading or a short maintenance period

RETROFIT PROCESS

The procedure for the retrofit of a control system is as follows:

- Request for quotation
- Inspection visit (if necessary)
- Quotation (lump sum if requested)
- Order
- Engineering
- Production
- Class approval
- Shipment
- Installation on board (by yard / owner / Wärtsilä)
- Commissioning by Wärtsilä service engineer
- Sea trials by Wärtsilä service engineer

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