

Dedicated to People Flow™



THE FIRST STEP TO A NEW BEGINNING

# KONE marine modernization solutions



## Managing the many lifecycles

The purpose of KONE modernization is quite simple: to keep the elevators and escalators on your ships operating safely and reliably, for the lifetime of the ship.

### A flexible, modular approach

The elevator shaft or the escalator truss are built to last for decades. With regular maintenance they should stay in full-time operation even under harsh environmental conditions for the lifetime of the ship. But different equipment components operate under different lifecycles. Mechanical parts usually last for

decades, but electrical and signalization systems may need to be replaced. However, safety regulations may have changed since the ship was launched, and aesthetics that were ultramodern a few years ago might now look a bit old-fashioned.

In view of these various lifecycles, it makes sense to take a flexible approach. KONE provides a full range of solutions, from modular replacement of a single component to full replacement of the entire installation.

### The first step

Before you put your ship in dry dock for elevator or escalator modernization, it is best to examine the equipment from stem to stern.

The KONE Care for Life™ service is a full analysis of the installation, that pays particular attention to issues of performance, safety, aesthetics and accessibility. Based on this assessment, we present a range of solutions. These can range from upgrades and modular modernization, to full modernization or full replacement.

### Lasting performance

KONE elevators and escalators are built for decades of reliable operation. To help you get the best performance for the lifetime of your ship, we can provide regular and emergency KONE Care™ maintenance services in all major ports around the world.



## Elevator modernization

A modular solution enables you to modernize the elevator with minimal time in dry dock and minimal impact on the ship's structure.

### A flexible approach

You can select the modules that require the most urgent attention, and upgrade the other modules as needed. For example, you can replace the electrical system or upgrade the interior, while leaving the mechanical components intact. Modular solutions cover control units, hoisting, signalization, doors, electrical systems, car interior, and safety issues.

### Modular solutions

With a new computerized control system, you can lower the elevator's energy consumption and reduce the waiting time.

A new **KONE hoisting unit** not only increases reliability, but also improves the comfort of passengers. The KONE EcoDisc® hoisting machine saves space and significantly reduces energy consumption. The gearless design needs no oil and gives a smooth, comfortable ride.

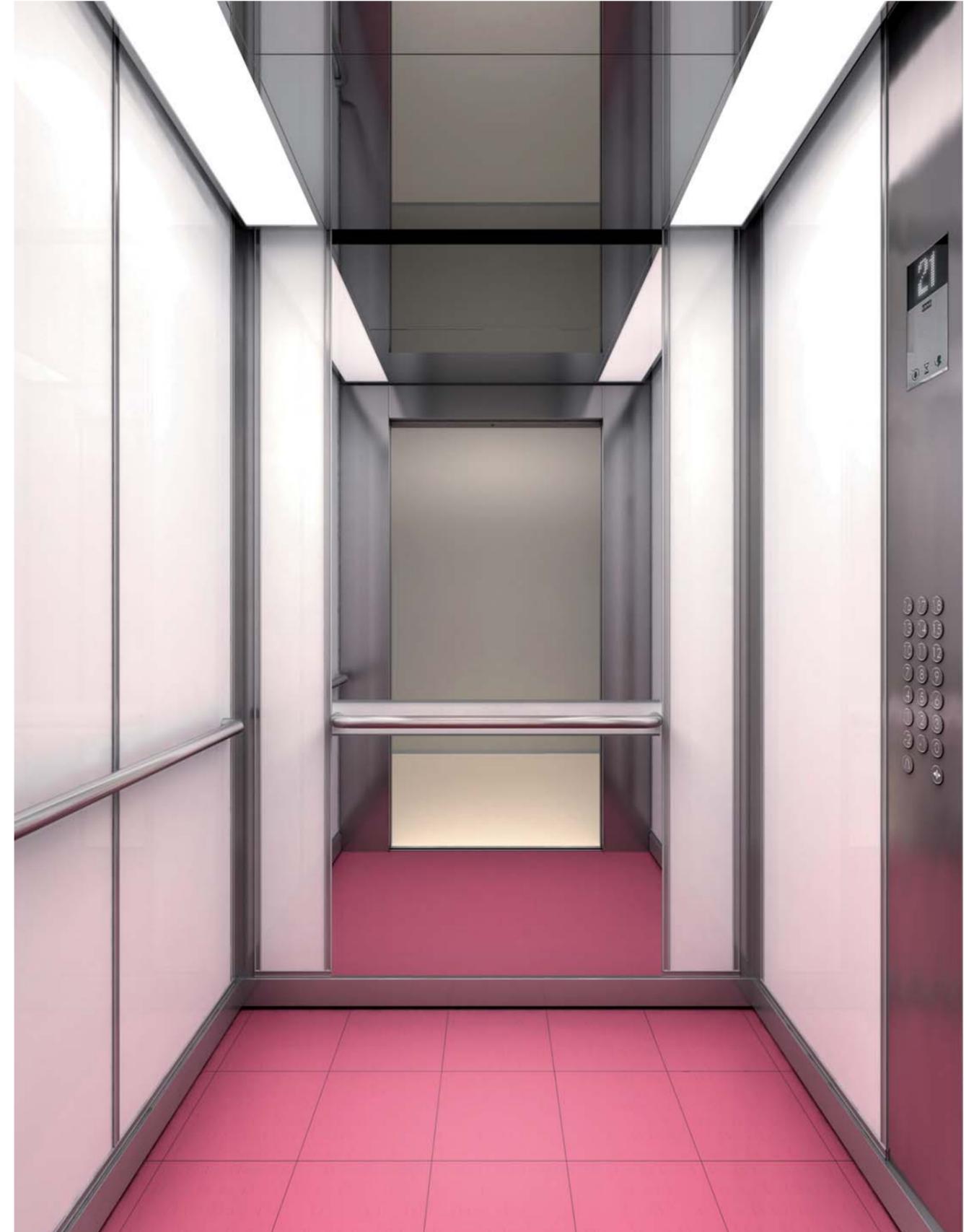
A new **signalization package** immediately refreshes the passenger interfaces inside the elevator and on the landings. The packages are designed to provide improved access for passengers with impaired mobility.

New **KONE elevator doors** automatically open wide to give safe access for passengers of all ages. KONE ReNova™ Slim doors increase comfort and safety, and they also save space.

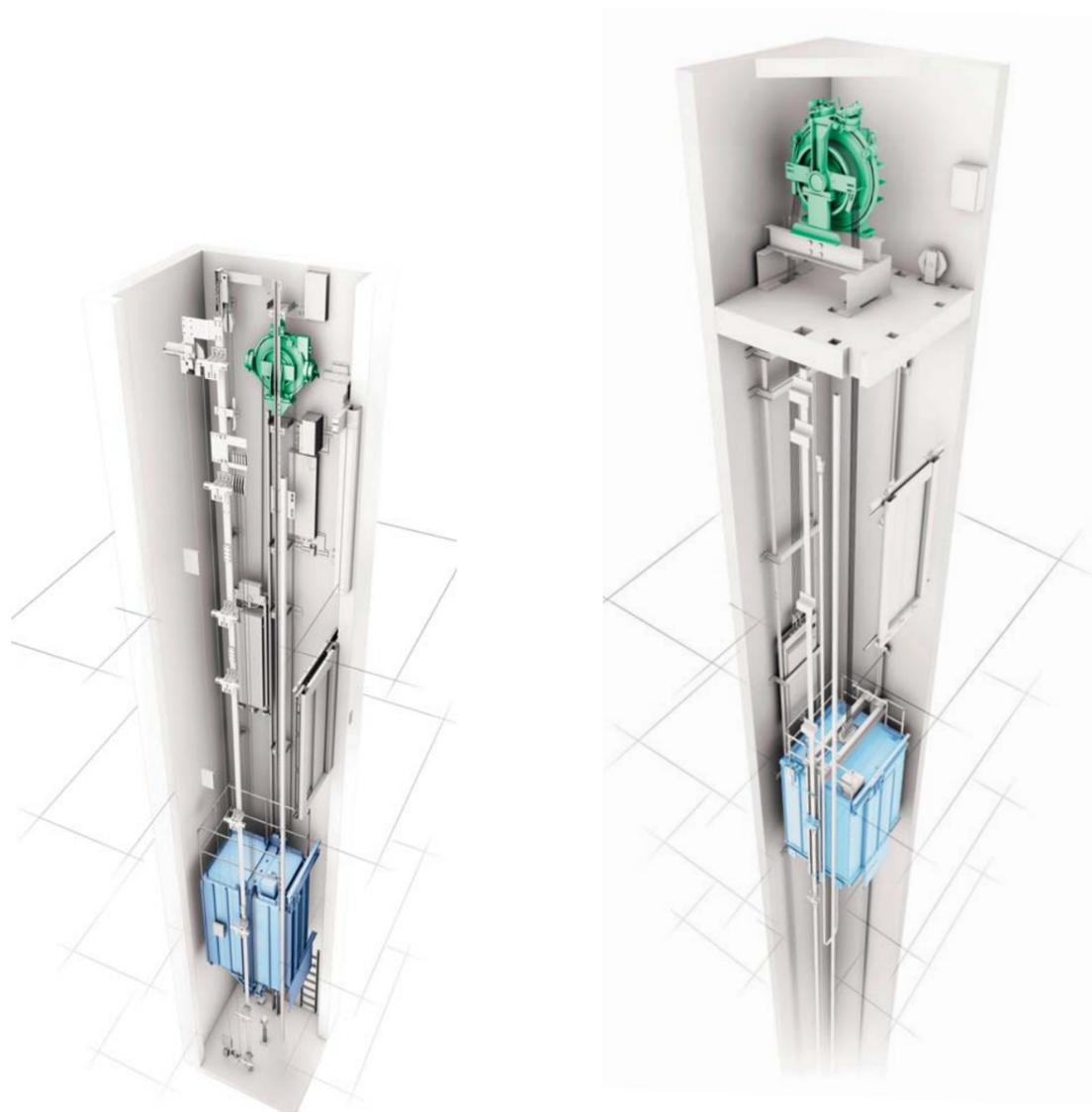
A new **car interior** can be installed in just one working day to give the elevator a brand-new look. The interior comes as a complete solution, with sidewalls, ceiling and floor covering as well as modern lighting and a new operating panel.

Worn-out **electrical components** often cause malfunctions, so the best way to increase the performance and safety of an old elevator is to modernize its electrification system.

To address **safety issues**, we offer modular packages. The basic package includes the controller, electrification, hoisting and signalization. This allows you to have the latest technology inside the shaft while keeping the existing landing doors, minimizing disturbance and reducing costs.



## Solutions for a new beginning



### KONE MonoSpace® machine-room-less elevator

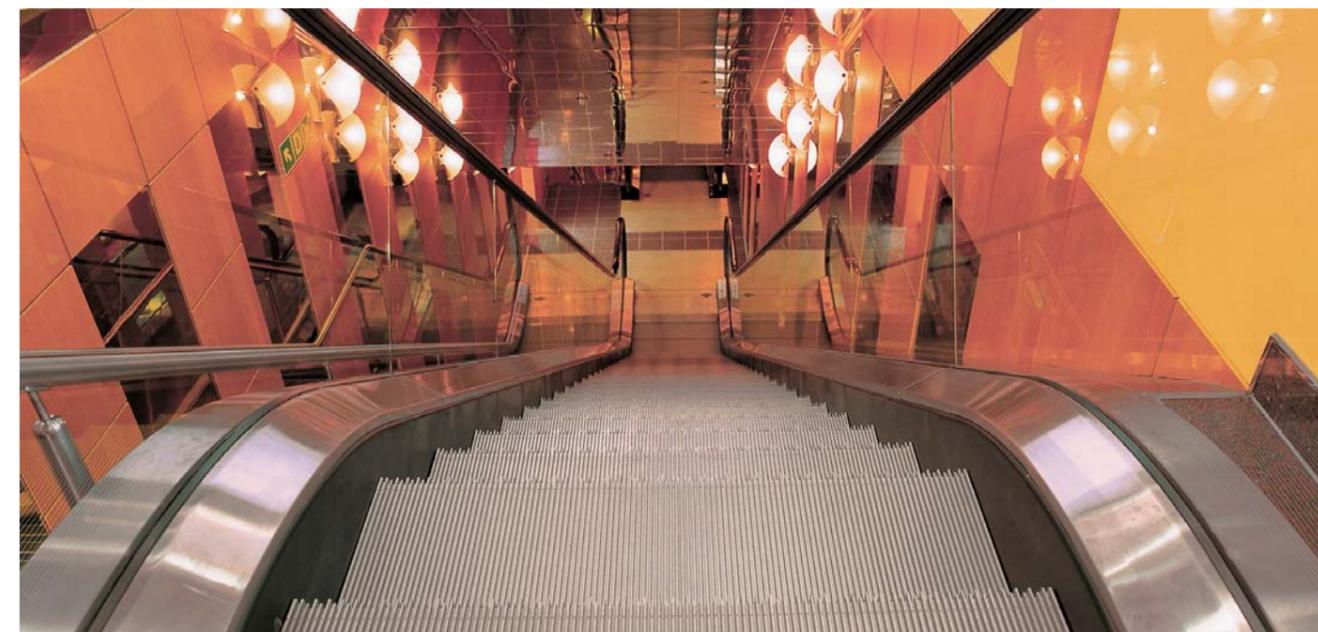
When modernizing an elevator, it is worth to choose a solution that saves energy and space. The KONE MonoSpace® is a light-weight, highly-efficient, gearless solution that provides significant costs savings in the long run.

The KONE MonoSpace® requires only a single space – the shaft, and the machine room is no longer needed. Removing the machine room gives greater design freedom and saves construction costs. As a result, the elevator can also serve the top most deck.

### KONE MiniSpace™ elevator with a small machine-room

For high capacity requirements, the KONE MiniSpace™ is a highly efficient, gearless solution. The machine room for the KONE MiniSpace™ needs just 40% of the space compared with a conventional traction elevator, saving costs and maximizing the usable space in the ship.

The small machine room can be located above, beside or below the shaft, whichever is most convenient for the ship's design. The KONE MiniSpace™, like the KONE MonoSpace®, is powered by the eco-efficient KONE EcoDisc® hoisting machine.



## Escalator modernization

**KONE offers a full range of solutions for escalator modernization: modular and full modernization, and full replacement.**

### Full replacement or modernization

In full modernization, you retain the truss, but replace all other escalator components. In full replacement, the entire installation including the truss is removed and a new one is put in its place. This can be done in open, easy to access locations to give the benefits of a new escalator, with quick installation time.

### Modular modernization

This allows modernization to be done quickly, with a minimal impact on the ship's operation. You can replace the modules that require the most urgent attention, and upgrade the others as needed. In this way you get a safe, reliable and energy-efficient escalator, and modernization that is fast, clean and less disruptive.

Replacing the old **worm gear** with a highly efficient KONE drive reduces energy consumption and improves performance. The chainless drive minimizes downtime and increases the availability of your escalators.

Replacing the old **controller** with a new microprocessor-based controller significantly improves safety and energy-efficiency. The KONE controller connects to the latest safety monitoring systems.

Improving the **aesthetic appearance** of the escalator can make it an eye-catching feature of the ship. Numerous upgrade packages are available to integrate with the design of the ship.

**Safety requirements** have become much stricter in recent years. KONE provides solutions to upgrade your escalator so that it conforms with the latest norms and safety standards.

**Good accessibility** makes the escalator safer and more convenient for all passengers. Upgrade packages are available for the entrance/exit areas to provide visual and audible announcements as well as travel direction indication.

### KONE EcoMod™ Less time in dry dock

With KONE EcoMod™ full escalator modernization, you replace the entire escalator but keep the existing truss. This eliminates costly structural modifications, and you can preserve the existing décor, such as decks and walls. In this way you get new escalator technology with installation that is faster, cleaner and less disruptive. Escalator modernization can also be carried out while the ship is in dry dock or at sea.



KONE Marine provides innovative and eco-efficient solutions for elevators and escalators. We support our customers every step of the way; from design, manufacturing and installation to maintenance and modernization. KONE is a global leader in helping our customers manage the smooth flow of people and goods throughout their ships.

Our commitment to customers is present in all KONE solutions. This makes us a reliable partner throughout the life-cycle of the ship. We challenge the conventional solutions of the industry. We are fast, flexible, and have a well-deserved reputation as a technology leader, with such innovations as KONE MonoSpace®, KONE MiniSpace™, KONE EcoDisc® and modular Plug-in installation.

KONE Marine is the global leader in marine people flow solutions – every second cruise ship is equipped with KONE elevators and escalators. KONE employs over 32,500 dedicated experts to serve you in over 50 countries.

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