

Focus on  
**MARINE**



**LINAK-US.COM/TECHLINE**

**LINAK®**   
WE IMPROVE YOUR LIFE

# Understanding your needs

From small motor boats over sailboats to luxury yachts, regardless of the type of your boat, LINAK® can help you with all kinds of movements by offering high quality electric actuator solutions.

When your customers step onto their boat, yacht or other recreational vessel, they will expect comfort and intuitive usability. Integrating movement solutions in your boat design will help meet these demands, while utilizing the limited space available. LINAK is ready to support this design journey with tried and tested actuator solutions that are easily implemented and adapted.

For all boats it is often critical that products work under extreme conditions. LINAK actuators are capable and well suited for use in corrosive environments where salt, water, wind and sun wear out equipment quickly. Our actuators can be adapted to even harsher conditions with stainless steel elements, and the actuators require no maintenance.

## What can LINAK do for boat builders?

- Supply reliable products specially designed for harsh conditions
- Be a one supplier of complete actuator solutions
- Provide maintenance-free products with a long lifetime
- Offer a broad product range – for all demands, also stainless steel solutions
- Offer ignition protection certified actuators
- Offer a high degree of flexibility
- Offer plug and play solutions for easy installation
- Offer a close cooperation with our sales and application engineers



# What LINAK actuators do for marine applications

For marine boats and yachts LINAK® actuators offer a wide range of possibilities, both for indoor and outdoor use. Easily operate exterior applications such as ladders, ventilation systems, valves, engine hatches, storage access doors or interior applications such as beds, the captain's chair, TVs; anything that requires an extension or a retraction adjustment. Actuators even make it easy to perform regular maintenance of your watercraft. Check out some application ideas here.

## Windows

Automatically opening and closing windows or skylights for space optimization and ventilation.

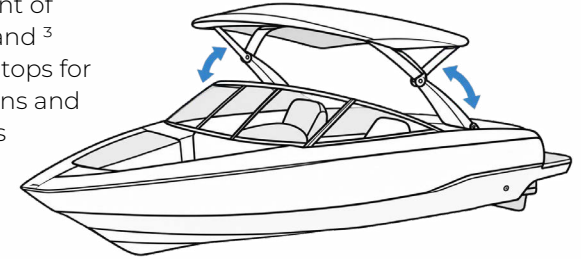


## Boat hatches

Opening and closing of hatches for easy access to the engine compartments or storage spaces

## Boat tops & towers

Simple electrical adjustment of hard tops for luxury boats and <sup>3</sup> shing boats, canvas bimini tops for pleasure boats and pontoons and towers for watersport boats

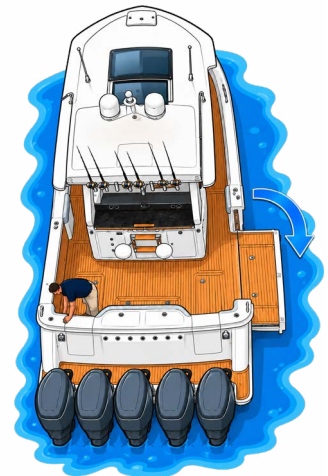


## Swim platform

Easily lowering or raising the swim platform on a sailboat for direct and safe access to the water

## Terrace

Provides easy access to the water on boats with outboard motors through raising and lowering of platform.



# The new LA36 Marine

## Specifications:

- Up to 1 meter submersion in fresh water

## Protection Class:

- IP68 up to 1M
- IP69k Static

## Stroke Length:

- Up to 250mm

## Max Speed:

- Up to 52mm/s (1700N gear ratio)

## Duty Cycle:

- Up to 20%

## Max Load:

- Up to 6800N

## Temperature:

- Operating temperature (ambient): 20°F to 150°F (-7°C to 65°C)

## Storage:

- -40°F to 165°F (-40°C to 74°C)

## CAN J1939 Integrated Feedback Includes:

- Positional accuracy as high as 0.1mm
- Onboard Diagnostics
- Position
- Speed
- Status
- Current Draw

**CAN|J1939**



Assembled  
in the USA



# Actuators for marine

## LA37 actuator - solid and powerful

Tough applications require equally tough actuator solutions. The actuator LA37 is specifically developed for heavy-duty applications in harsh environments, where there is a need for high lifting capacity and holding force

### LA37 features:

- Max. thrust up to 15,000 N (3,372 lbs)
- Max. speed up to 11 mm/s (.43 in/s)
- Standard stroke 50-1000 mm (1.96-39.37 in)
- IP 66 dynamic / IP 69K static
- Voltage 12, 24 or 48 V DC
- Heavy-duty reinforced aluminum housing and solid metal construction
- Integrated brake, high selflocking ability
- Hall sensors or potentiometer for relative or absolute feedback, regardless of the stroke length
- Built-in endstop
- Hand crank for manual operation
- Salt spray and chemical tested
- High-pressure cleaning resistant



Assembled  
in the USA



## LA36 actuator - reliable and tough

The LA36 actuator is a solid and powerful actuator designed to operate under extreme conditions. A very strong alternative to hydraulic solutions.

### LA36 features:

- Max thrust up to 6,800 N (1,529 lbs)
- Max speed up to 160 mm/s (6.30 in/s)
- Standard stroke 50-1200 mm (1.96-47.24 in)
- IP 66 dynamic / IP 69K static
- Voltage 12, 24, or 48 V DC
- Heavy-duty reinforced aluminum housing and solid metal construction
- Integrated brake, high self-locking ability
- Hall sensors or potentiometer for relative or absolute feedback, regardless of the stroke length
- End stops: slip clutch or built-in limit switches
- Hand crank for manual operation
- Salt and chemical tested
- High pressure cleaning resistant



Assembled  
in the USA



# Actuators for marine

## LA33 actuator - compact and powerful

The actuator LA33 combines compact design and high power in a solution fit for use in industrial settings and for demanding applications that require customized interfaces, faster, or silent operation and to work in harsh and extreme environments.

### LA33 features:

- Max thrust up to 5,000 N (1,124 lbs)
- Max speed up to 70 mm/s (2.75 in/s)
- Standard stroke 100-600 mm (3.93-23.62 in)
- IP 66 dynamic / IP 69K static
- Voltage 12, 24, or 48 V DC
- Heavy-duty reinforced aluminum housing and solid metal construction

### Options:

- Integrated brake, high selflocking ability
- Hand crank for manual operation
- Built-in limit switches
- Hall effect sensor
- Endstop signals



## LA31 actuator - versatile and reliable

The LA31 actuator is a very quiet and powerful actuator designed for a variety of applications. Due to its high capacity and strong protection, the TECHLINE actuator is ideal for a variety of applications where low-noise yet high capacity is needed. The LA31 TECHLINE offers options for digital or analog feedback, as well as signal switches.

### LA31 features:

- Max thrust up to 6,000 N (1,348 lbs) in push and 4,000 N (899 lbs) in pull
- Max speed up to 26.6 mm/s (1.05 in/s)
- Standard stroke 30-630 mm (1.18-24.8 in)
- IP X6
- Voltage 12 or 24 V DC
- Built-in limit switches



# Actuators for marine

## LA25 actuator - compact and robust

With its robust design, high IP degree and aluminum housing, the actuator LA25 is ideal for harsh environments where operation under extreme conditions is required.

### LA25 features:

- Max thrust up to 2,500 N (561 lbs)
- Max speed 25 mm/s (.98 in/s)
- Standard stroke 20-600 mm (.79-23.62 in)
- IP66 dynamic and IP69K static
- Voltage 12 or 24 V DC
- Heavy duty aluminum housing and solid metal construction.



## LA23 - small and strong

The LA23 actuator is a small and strong push or pull actuator. The LA23 actuator can be used in various applications where size is important.

### LA23 features:

- Max thrust up to 2,500 N (561 lbs)
- Max speed 21 mm/s (.83 in/s)
- Standard stroke 20-500 mm (.79-19.7 in)
- IP X4 and IP X6
- Voltage 12 or 24 V DC
- Electrical and mechanical end stop



## LA21 - small and strong

The LA21 is a small yet powerful industrial electric linear actuator designed for fast and precise positioning.

### LA21 features:

- Max thrust up to 3,500 N (786.8 lbs)
- Max speed up to 85 mm/s (3.35 in/s)
- Standard stroke 50-800 mm (1.97-31.5 in)
- IP 66 dynamic / IP 69K static
- Voltage 12, 24, or 48 V DC
- Heavy-duty reinforced aluminum housing and solid metal construction



## Actuators for marine

### LA14 actuator - robust and reliable

The actuator LA14 is a very tough actuator with a high IP degree and aluminum housing, making it ideal for use in harsh and demanding environments



#### LA14 features:

- Max thrust up to 750 N (169 lbs)
- Max speed up to 45 mm/s (1.77 in/s)
- Standard stroke 20-130 mm (0.79–5.11 in)
- IP66 dynamic / IP69K static
- Voltage 12 or 24 V DC
- Heavy duty aluminum housing and solid metal construction.
- Built-in limit switches

### LA12 actuator - light and compact

Thanks to its small size and outstanding performance, the actuator LA12 provides a practical and cost-effective alternative to small-scale traditional hydraulic and pneumatic systems.



The LA12 is ideal for applications requiring short linear movements.

#### LA12 features:

- Max thrust up to 750 N (169 lbs)
- Max speed up to 40 mm/s (1.57 in/s)
- Standard stroke 19-130 mm (0.75–5.11 in)
- IP66 dynamic
- Voltage 12 or 24 V DC
- High quality reinforced plastic housing protects motor and gear
- Built-in limit switches and EOP
- Hall sensors or potentiometer for relative or absolute feedback

## Lifting column for marine

### DL2

Robust two-stage lifting column is the ideal choice for ergonomic height adjustment of high-load applications demanding strength and sturdiness.

- Load per column up to 1,500 kg (3,307 lbs)
- Max speed up to 15 mm/s (0.59 in/s)
- Standard stroke 650 mm (25.6 in)
- IP66 dynamic / IP69K static
- Voltage 100-240 V (universal)



## Communication options



The flexible LINAK® I/O™ interface enables a range of movements and choice of input control and data outputs. It offers endless modifications for full control of the exact functionalities you need. Optional bluetooth connection through Actuator Connect.



CANopen® is a communications protocol that relies on the CiA 301 standard and is one of the main network architectures used in the marine industry.



CAN SAE J1939® is a set of standards defining how ECUs (Electronic Control Unit) communicate via CAN – offering a common language for all manufacturers.



Actuator Connect™  
Configurator



Configure, prototype, and troubleshoot faster- one tool for all of our communication options.

### Remote Support

LINAK representatives can remotely access actuator diagnostic data and status information, helping accelerate troubleshooting, optimize performance, and reduce equipment downtime.

### Bluetooth-enabled access

Bluetooth functionality allows for wireless access to the actuators removing the need to disassemble the application for access to the actuators.

### Faster commissioning

Test and fine-tune in minutes

### Plug & Play configuration

No coding required

# Testing program

In industrial applications, actuators and lifting columns are just one part of a larger system. Regardless of the task, smooth and reliable linear movement is essential. That's why every actuator undergoes a thorough function test before leaving our factory.

Our electric actuators are built for tough conditions and tested extensively before market release. Lifting columns, however, are not designed for harsh environments and follow a different testing approach.



## Electrical tests:

All electrical parts are tested i.e. power supply, power and signals cables, control signals etc. Electrical immunity is tested according to industrial standards i.e. for radio noise, electrical discharge and burst.

EN/IEC 61000-6-4  
EN/IEC 60204  
EN 50121-3-2  
94/25/EC  
EN/ISO 13766  
EN/IEC 61000-6-2  
2004/104/EC  
EN/ISO 14982  
EN/ISO 13309

- Generic standard emission industry
- Electrical equipment of machinery
- Railway applications - Rolling stock apparatus
- Recreational crafts directive
- Earth moving machinery
- Generic standard immunity industry
- Automotive Directive
- Agricultural and forestry machines
- Construction machinery



## Climatic tests:

In the climatic test the actuators are tested to operate in extreme temperatures as well as to endure rapid changes in temperature. In a dunk test, the actuators have to withstand repeating temperature fluctuations between +85°C to -40°C while maintaining its full functionality and ingress protection.

EN60529-IP6X  
EN60529-IPX6  
ISO16750-IP69K  
IEC60068-2-3  
IEC60068-2-30  
ISO16750-4:2010  
EN60068-2-52  
BS7691 Section  
6.11.2.4

- Dust
- Water
- High-pressure cleaning
- Moisture storage
- Operation in moisture
- Dunk test
- Salt spray
- Chemicals



## Mechanical tests:

**Vibration:** The actuator must withstand continuous vibration in three directions.

**Shock:** The shock test puts the actuator through three shocks of up to 50 G in each of six directions.

**Bump:** The actuator receives bumps of up to 30 G in each of six directions several hundred times.

EN60068-2-64 (Fh)  
EN60068-2-29 (Eb)  
EN60068-2-27 (Ea)

- Vibration
- Bump
- Shock



For further information, please visit our website:  
**LINAK-US.COM/BUSINESS-AREAS/MARINE/**

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**QUALITY**

Built by market leading experts, using state-of-the-art technologies and perfected production methods, you can expect the same quality worldwide.



**INNOVATION**

Innovation is in our core. We take the lead and have the courage to make it real.



**RESPONSIBILITY**

We are responsible in what we do – towards customers, employees and environment. Creating trust is a natural part of who we are.



**LOCAL  
& GLOBAL**

From global presence to local understanding. We believe in world-wide support and being close to our customers.