

Focus on
Construction

www.linak.com/techline

LINAK® 
WE IMPROVE YOUR LIFE

Linear actuators - tough enough for construction work

The main concerns when considering an electric actuator solution for heavy-duty construction machinery and equipment are durability and reliability.

These machines must work relentlessly in all kinds of weather and withstand dust, dirt and rough handling. Any failure could put both people and values at risk. Not to mention the often costly delays caused by failing equipment.

We give you two good reasons why you can rest assured that your TECHLINE® actuator solution will do the job no matter what.

The first good reason is our extensive testing programme. The second and equally important reason is the fact that all members of the TECHLINE team of engineers and consultants have vast product and application expertise.

Quite simply, we understand and respond to your needs. Our primary objective is to help improve your application to give you a competitive edge.

Go electric and spot the difference

Electric linear actuators are the perfect solution when you need simple and clean movement with accurate and smooth motion control. You may choose actuator systems for adjustments, tilting, pushing, pulling and lifting with thrusts up to more than 10,000 N.

Actuators can be integrated into sophisticated control systems using data bus communication. You get precise position feedback and accurate variable control over acceleration and velocity. Compared to both hydraulic and pneumatic systems an actuator solution is a lot easier to install. It takes up less space and there are no hoses and pumps that require routine maintenance.

A linear actuator has a long lifetime with little or no maintenance at all. This ensures a very low total operating cost compared to other systems. Electric actuator systems are quiet, clean, non-toxic and energy efficient. They fulfil the ever increasing demands and legislation concerning environmentally sound equipment.



Hydraulic system

- Complex system of oil tanks, pumps, filters and hoses
- Per default no integrated positioning
- Requires routine maintenance
- High energy consumption
- Risk of fluid leaks

VS.

Electric actuator system

- Simple system of actuator, control and power connection
- Integrated positioning
- Maintenance-free
- Low energy consumption
- No fluids



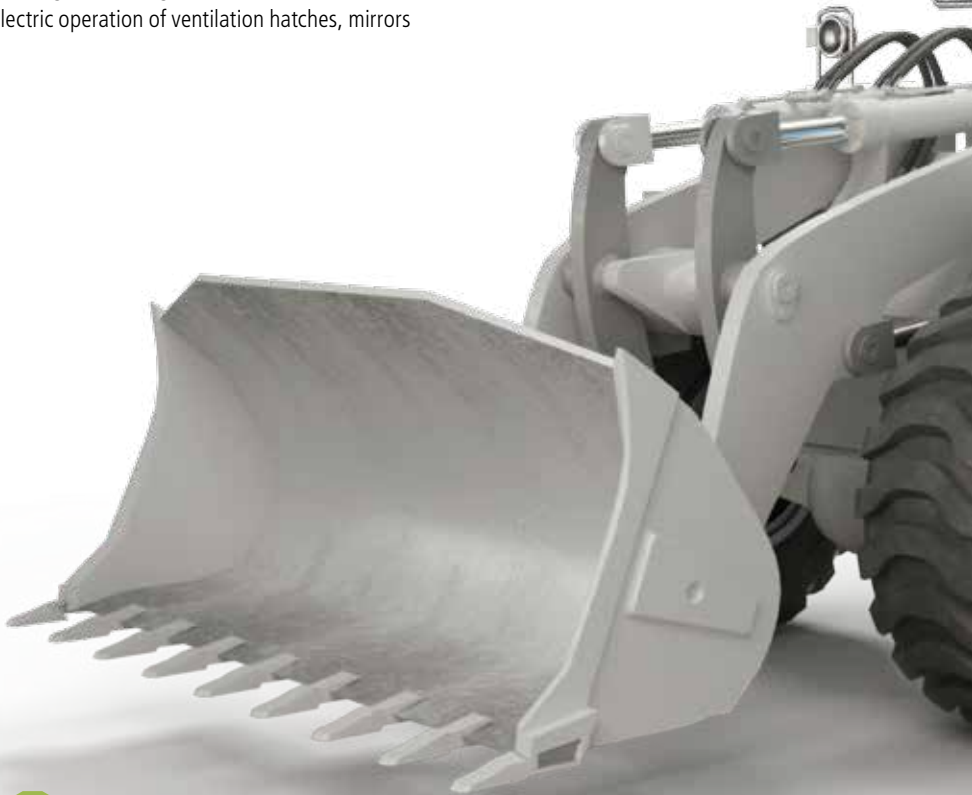
What LINAK® actuators do for the wheel loader

TECHLINE® actuator systems are ideal for use in harsh environments and they already provide movement and adjustments in a number of different construction applications.

In heavy machinery, electric actuators provide advanced motion control and rugged force for hoodlifts, steps and footboards, superior position feedback for throttle adjustment, ergonomic positioning of steering wheels and seats as well as electric operation of ventilation hatches, mirrors etc.

Steering wheel

Positioning of the steering wheel for easy access and comfort during operation



Quick attachment

For easy change of front end mounted tools

Cabin tilt

For easy access under the cabin if maintenance is needed



Throttle adjustment

Depending on the type of operation the number of revolutions and thereby the diesel consumption is adjusted to ensure economic operation



Hoodlift

Easy access for maintenance and routine service



Ladder

Moving access ladder up and down



Protection plates

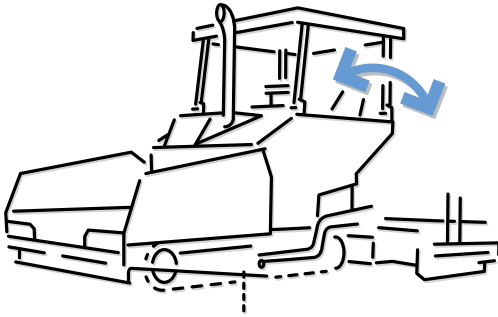
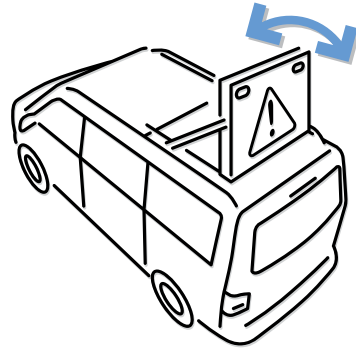
Easy access for maintenance and routine service on ground level



What LINAK® actuators do for the construction industry

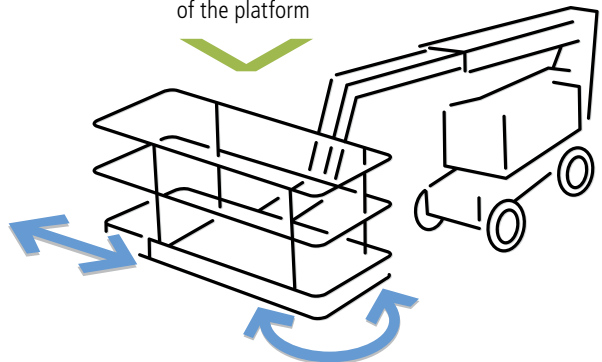
Use a LINAK® actuator to replace manual operations or even gas springs and hydraulics. Our products provide movement for a myriad of applications within the construction and off-highway industry.

Folding lights
Raising and lowering warning lights mounted on a vehicle



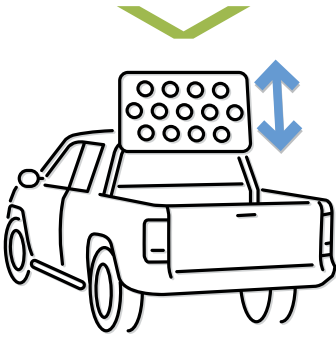
Asphalt paver
Raising and lowering the roof for easy transport of the asphalt paver

Aerial workstation
Adjustment of the work area and tilting of the platform



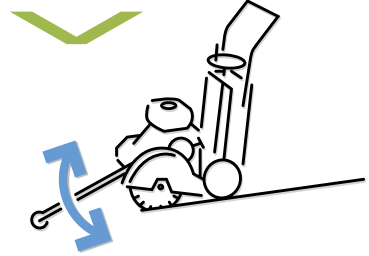
Truck sign

Raise and lower vehicle mounted signs



Concrete saw

Throttle control enabling a constant cutting speed. Power steering of the back wheel to keep the saw in a straight line. Raising and lowering the guide wheel

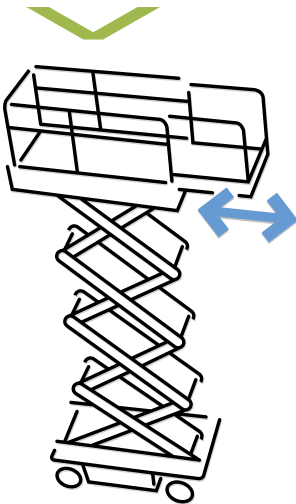


Water mist blower

Tilting and turning the spray heads for precise positioning of the water mist

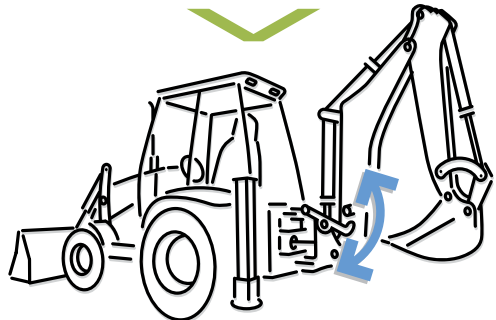
Lifts

Extend and retract the deck on an aerial work platform



Backhoe loader

Locking of the rear arm during transport



MOVE FOR THE FUTURE



Step into the future world of movement and enhance your competitive edge.

Do you want cost-effective performance, innovative technology and a competitive edge?

Go for IC™ and Move for the Future™



IC movement for construction machinery

IC is the range of integrated control options for TECHLINE® actuators that present you with almost unlimited possibilities for superior control and monitoring, to enhance the value and performance of your application.

For construction machinery, actuators with IC provide cost-effective performance and innovative technology:

- Simple installation with built-in electronics.
- Easy overview and precise control of the actuator movement.

- The actuator can be customised on site to fit multiple solutions in a single application.
- Easy monitoring of the actuator's condition which ensures a minimum of downtime.
- All IC options are based on the same well-tested interface, which is covered by the actuator's IP degree.

If you are looking for a movement solution that will help you stay competitive in the future, then go for LINAK actuators with integrated controller, and Move for the Future.

Integrated Controller:

- Customisable feedbacks
- Parallel movement
- BUS communication

INTEGRATED CONTROLLER

For more information on IC, please go to
www.linak.com/techline/moveforthefuture

Actuators for construction machinery

Actuator LA37 - 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. The LA37 offers the well-known LINAK quality, guaranteeing you a maintenance-free product with a long lifetime.



LA37 features:

- Max thrust up to 15,000 N
- Max speed up to 3.5 mm/sec
- Standard stroke 100-600 mm
- Protection class IP66 / IP69K
- Voltage 12 or 24V DC
- Heavy-duty aluminum housing for harsh conditions
- Integrated brake, high self-locking ability
- Hall sensors or potentiometer for relative or absolute feedback, regardless of the stroke length
- Built-in endstop
- Solid metal construction
- Hand crank for manual operation
- Salt spray and chemical tested
- High-pressure cleaning resistant
- **Available with IC™**



Actuator LA36 - reliable and tough

The actuator LA36 is one of the most solid and powerful LINAK actuators, designed to operate under extreme conditions. The LA36 is a maintenance-free product with a long lifetime and a high IP degree. This high-quality actuator offers a very strong alternative to hydraulic solutions.



LA36 features:

- Max thrust up to 10,000 N
- Max speed up to 160 mm/sec
- Standard stroke 100-999 mm
- Heavy-duty aluminum housing for harsh conditions
- Protection class IP66 / IP69K
- Integrated brake, high self-locking ability
- Voltage 12, 24 or 36 V DC
- Hall sensors or potentiometer for relative or absolute feedback, regardless of the stroke length
- Endstops: slip clutch or built-in limit switches
- Solid metal construction
- Hand crank for manual operation
- Salt and chemical tested
- High pressure cleaning resistant
- **Available with IC™ and CAN bus SAE J1939**



Actuators for construction machinery

Actuator LA33 - tough and powerful

The actuator LA33 is a true mid-size actuator that combines compact design and high power in one solution, fit for use in the most extreme environments. A thorough and demanding testing programme forms the basis for the maintenance-free and long lasting performance of this solid and high-quality actuator.



LA33 features:

- Max thrust up to 5,000 N
- Max speed up to 30 mm/sec
- Standard stroke 100-600 mm
- Heavy-duty aluminium housing for harsh conditions
- Solid metal construction
- Protection class IP66 / IP69K
- Integrated brake, high self-locking ability
- Voltage 12 or 24 V DC
- Hall sensors for relative or absolute feedback, regardless of the stroke length
- Built-in enstop switches
- Hand crank for manual operation
- Salt spray and chemical tested
- **Available with IC™**



Actuator LA30 - rugged and compact

The LA30 is a powerful actuator yet small enough to fit most applications. The actuator can be supplied with options such as built-in potentiometer for servo operation or an extra powerful motor for increased speed and strength (S-motor).



LA30 features:

- Max thrust up to 6,000 N
- Max speed up to 65 mm/sec
- Standard stroke 50-600 mm
- Protection class IP66
- Stainless steel piston rod
- Potentiometer for positioning
- Elegant and compact construction with small installation dimensions
- Self-locking ability

Actuators for construction machinery

Actuator LA25 - tough and compact

With its robust design, high IP degree and aluminium housing, the actuator LA25 is ideal for harsh environments where operation under extreme conditions is required. Furthermore, the compact dimensions of the LA25 make it applicable for confined spaces.



LA25 features:

- Max thrust up to 2,500 N
- Max speed 13 mm/sec
- Standard stroke 20-300 mm
- Protection class IP66 and IP69K
- Voltage 12 or 24 V DC
- Built-in electrical endstop
- **Available with IC™**



Actuator LA14 - robust and reliable

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

The LA14 offers top quality in every detail and ensures reliable performance in temperatures ranging from -40° to +85 °C. With its small size the LA14 is well suited for applications that require short linear movements.



LA14 features:

- Max thrust up to 750 N
- Max speed up to 45 mm/sec
- Standard stroke 40-130 mm
- Protection class IP66 dynamic / IP69K static
- Stainless steel inner tube and piston rod
- Voltage 12 or 24 V DC
- Heavy-duty aluminium housing for harsh conditions
- Built-in limit switches
- Wide range of customised feedback options
- Operation temperature from -40°C to 85°C
- **Available with IC™**



Actuators for construction machinery

Actuator LA12 - reliable 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.

After many years on the market, the actuator LA12 demonstrated that it is a very reliable and robust actuator that can handle almost any situation and challenge.



LA12 features:

- Max thrust up to 750 N
- Max speed up to 40 mm/sec
- Standard stroke 40-130 mm
- Protection class IP66
- 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, regardless of the stroke length
- **Available with Basic IC™**



SAE J1939 CAN bus

As an all-in-one package solution, LINAK also offers actuators with integrated SAE J1939 CAN bus control. With this well-known bus standard you can use linear actuator movement in your CAN bus system without having to customise additional controls.

In addition to full position control, the CAN bus actuator is able to provide feedback information about the piston position, service data and full diagnostics. It also provides system identification data and actual current at runtime.



100% function tests

In each application, the actuator is just one component of many, but at TECHLINE® we fully appreciate that it is of utmost importance to you and your customers. Not a single actuator leaves LINAK® until it has undergone a 100% function test.

Depending on the actuator type, various tests have been carried through. Please consult your local LINAK office or take a look at the actuator data sheet in question to get a thorough test overview.

This is your guarantee that a solution based on LINAK TECHLINE electric actuator systems is a solution that will work reliably for years and years.

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.*

(*) These tests do not apply to third party products!

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 some tests, the actuator has to withstand going from a +100°C environment to -30°C repeatedly and still maintain full functionality.

Mechanical tests:

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

Shock: The shock test puts the actuator through 3 shocks of up to 100 G in each of 6 directions.

Bump: The actuator receives bumps of up to 40 G in each of six directions several hundred times.

- EN/IEC 61000-6-4** - Generic standard emission industry
- EN/IEC 60204** - Electrical equipment of machinery
- EN 50121-3-2** - Railway applications - Rolling stock apparatus
- 94/25/EC** - Recreational crafts directive
- EN/ISO 13766** - Earth moving machinery
- EN/IEC 61000-6-2** - Generic standard immunity industry
- 2004/104/EC** - Automotive Directive
- EN/ISO 14982** - Agricultural and forestry machines
- EN/ISO 13309** - Construction machinery



- EN600068-2-1 (Ab)** - Cold test
- EN60068-2-2 (Bb)** - Dry heat:
- EN60068-2-14** - Change of temperature
- EN60068-2-30** - Damp heat
- EN60068-2-52** - Salt spray
- EN60529-IP66** - Degrees of protection
- BS7691/96 hours** - Chemicals



- EN60068-2-36 (Fdb)** - Vibration
- EN60068-2-29 (Eb)** - Bump
- EN60068-2-27 (Ea)** - Shock





Global presence

LINAK has a well-developed sales and service organisation in Europe, America, Asia and Australia. Therefore, we can assist you and your customers locally, under the global sales concept idea: Be global, act local



For further information, please visit our website:
www.linak.com/techline

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