

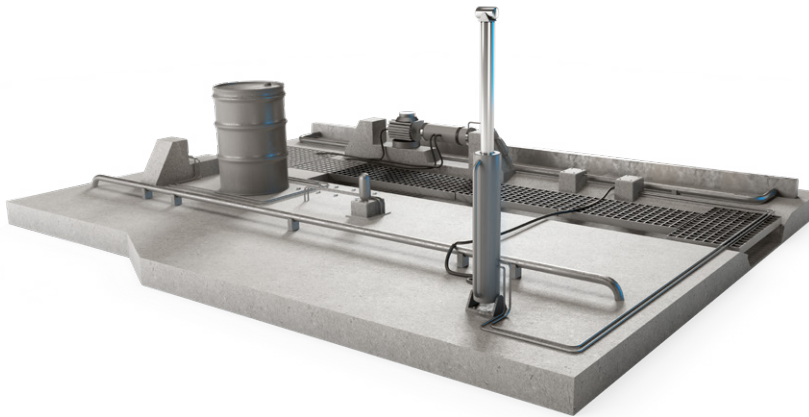


TECHLINE[®]
IMPROVING FLEXIBILITY

Focus on Outdoor Power Equipment

LINAK.COM/TECHLINE

LINAK[®] 
WE IMPROVE YOUR LIFE



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

Electric actuators for outdoor power equipment

LINAK® improves productivity with simple, safe and powerful motion control for a variety of Outdoor Power Equipment. From Zero Turn Radius mowers, golf mowers and utility vehicles, to spreaders, sprayers and other turf and snow maintenance attachments, LINAK delivers:

- Reliable products designed for harsh outdoor conditions
- Excellent alternative to many light-duty hydraulic applications
- Turnkey supplier of complete motion control solutions
- Cutting-edge technology when more sophisticated controls and precise motion is required
- Close collaboration between your team and our application engineers, represented in over 30 countries

From small, light and compact actuators for space savings, to powerful robust systems able to lift up to 15,000 N, LINAK electric actuators are built for long-lasting durability.

Furthermore, our actuators are tested to the highest standards and can be delivered in protection classes up to IP66 and IP69K - water, dust and dirt proof and tested for high-pressure cleaning.

Go electric and spot the difference

With electric actuators you achieve reliable and cost-effective operation, without oil leaks, costly maintenance, spareparts, and loss of productivity associated with downtime.

With fewer components required to design a system, you can reduce your component costs and it is possible to replace an entire fluid system with one electric actuator.

Electric actuators from LINAK provide easy and time-saving installation as there are no hoses, clamps or pumps to install and test.

LINAK offers optional built-in positioning feedback, parallel operation and accurate positioning. This allows you to design innovative and flexible solutions for your customers.

"Electric actuators from LINAK provide easy and time-saving installation as there are no hoses, clamps or pumps to install and test. This allows you to design innovative and flexible solutions for your customers."

Furthermore, our controls can easily connect to the existing power supply or control systems, offering a simple plug and play solution.

LINAK electric actuators work on low voltage DC, provide high self-locking ability and optional manual operation, creating a safer work environment for the operator. Moreover, an electric solution is not only more energy efficient it also eliminates the risk of hazardous oil leaks, providing a greener alternative.

Additionally, an electric linear system requires no maintenance, minimising downtime of the application.

LINAK offers service worldwide

Please contact your local LINAK office with your enquiry



What LINAK actuators do for the lawn mower

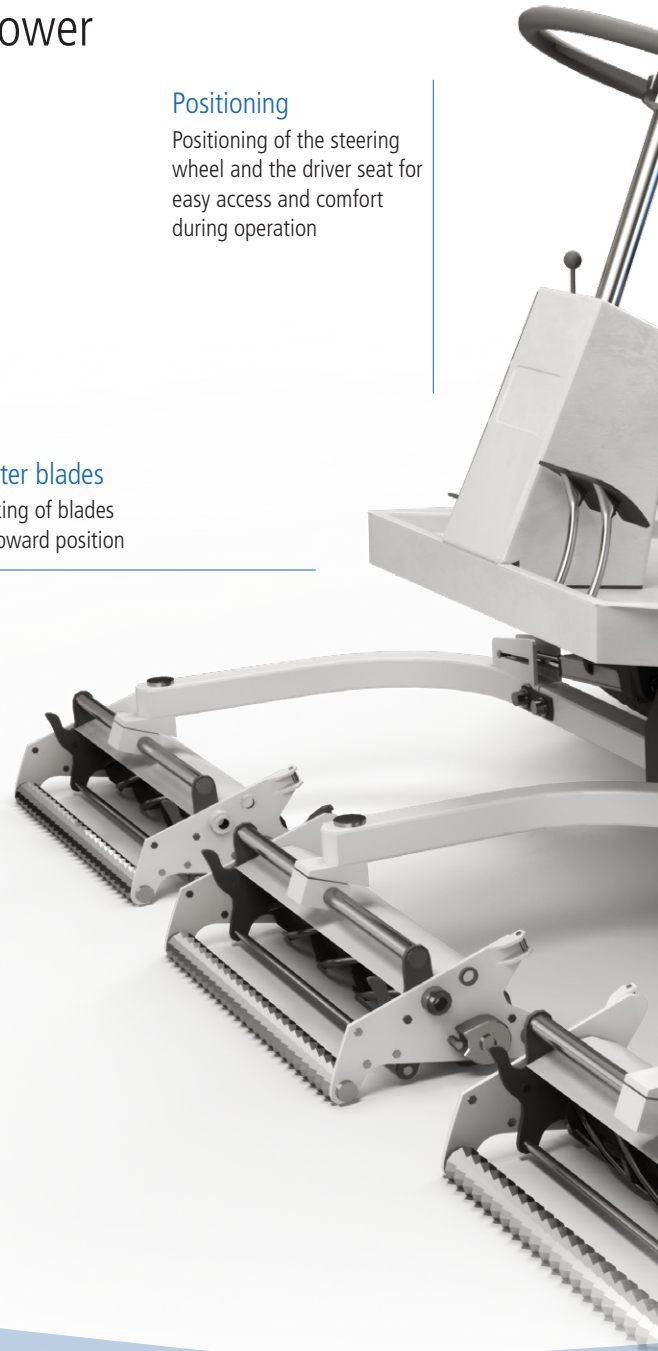
For the lawn mower, the usage of electric adjustment of e.g. the cutter blades and the positioning of the steering wheel ensures an optimum mowing result. Also, by adjusting the mowing height the lawn maintains its perfect condition and the mowing frequency can even be decreased. LINAK® actuators are very suitable for e.g. lawn mowers used on big fields like community lawns, golf courses etc.

Positioning

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

Cutter blades

Locking of blades in upward position





Engine hatch

Opening and closing of the engine hatch for effortless, quick access

Cutter blades

Individual adjustment of the cutter blades

What LINAK actuators do for the lawn mower

For the lawn mower, the usage of electric adjustment of e.g. the cutter blades and the positioning of the steering wheel ensures an optimum mowing result. Also, by adjusting the mowing height the lawn maintains its perfect condition and the mowing frequency can even be decreased.

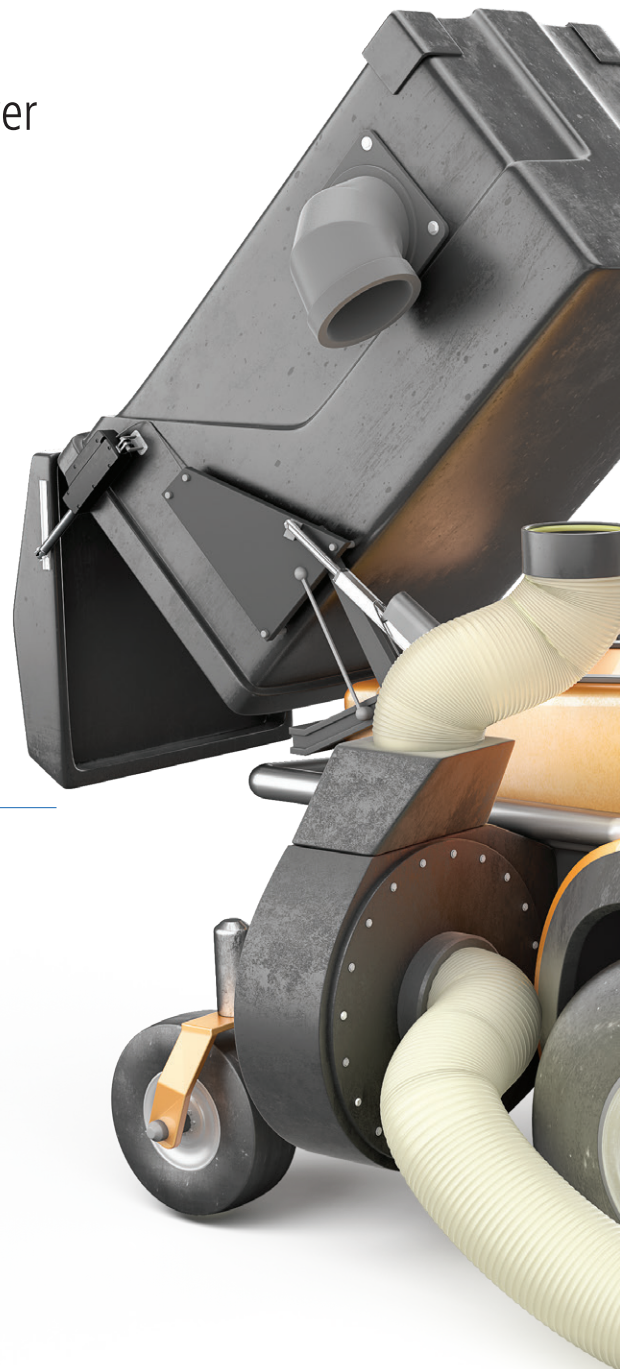
LINAK® actuators are very suitable for e.g. lawn mowers used on big fields like community lawns, golf courses etc.

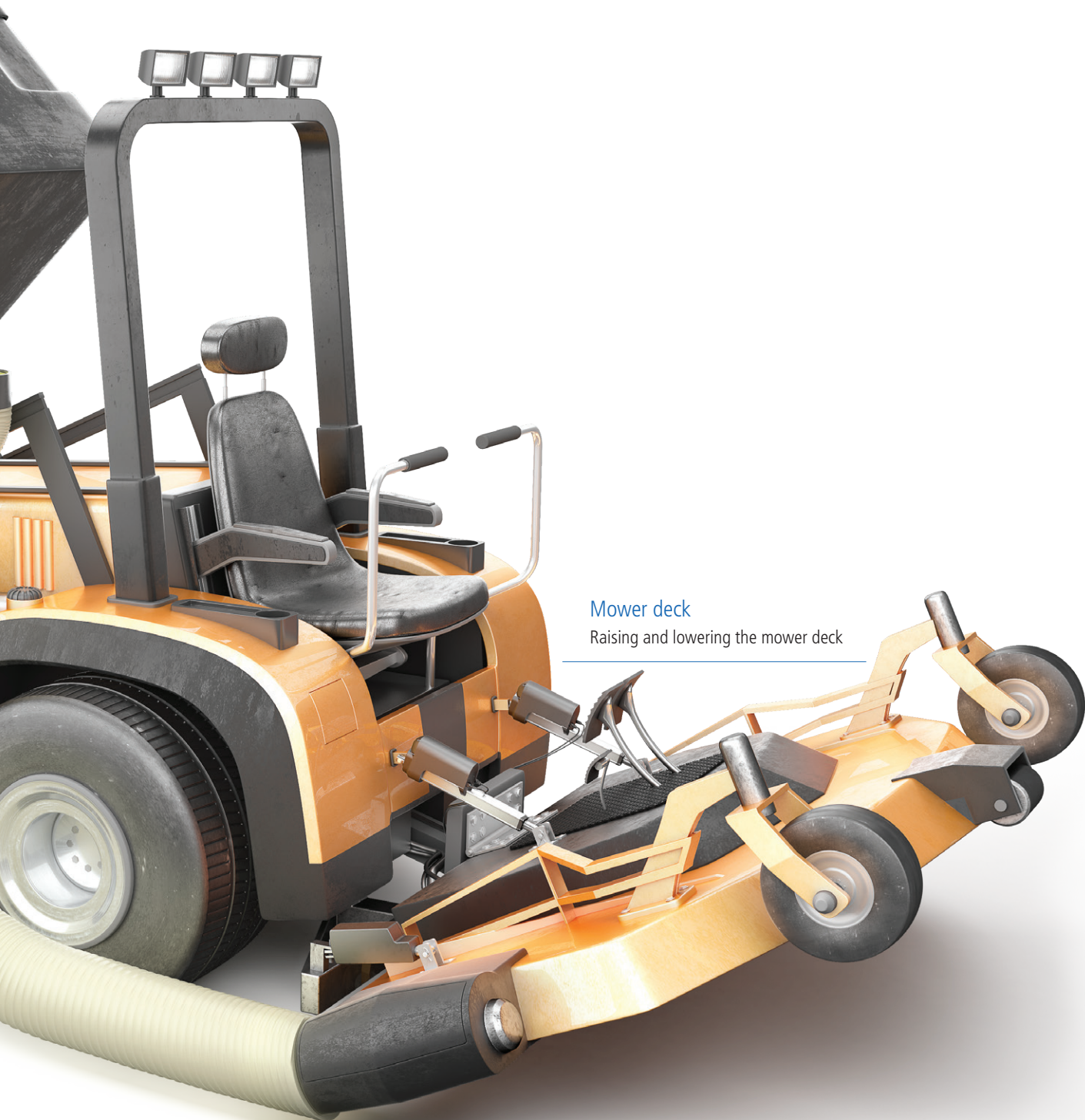
Bagger lid

Opening and closing
of the bagger lid

Bagger

Tilting of the bagger





Mower deck

Raising and lowering the mower deck

What LINAK actuators do for outdoor power equipment

LINAK® actuator solutions provide easy and precise adjustment in a wide range of outdoor power equipment applications.

Snow gun

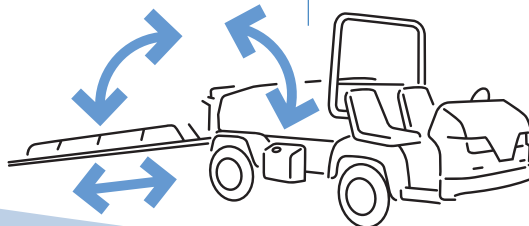
Electric tilting for increased automation in snowmaking



Ride on spreader/sprayer combo



Boomsprayer

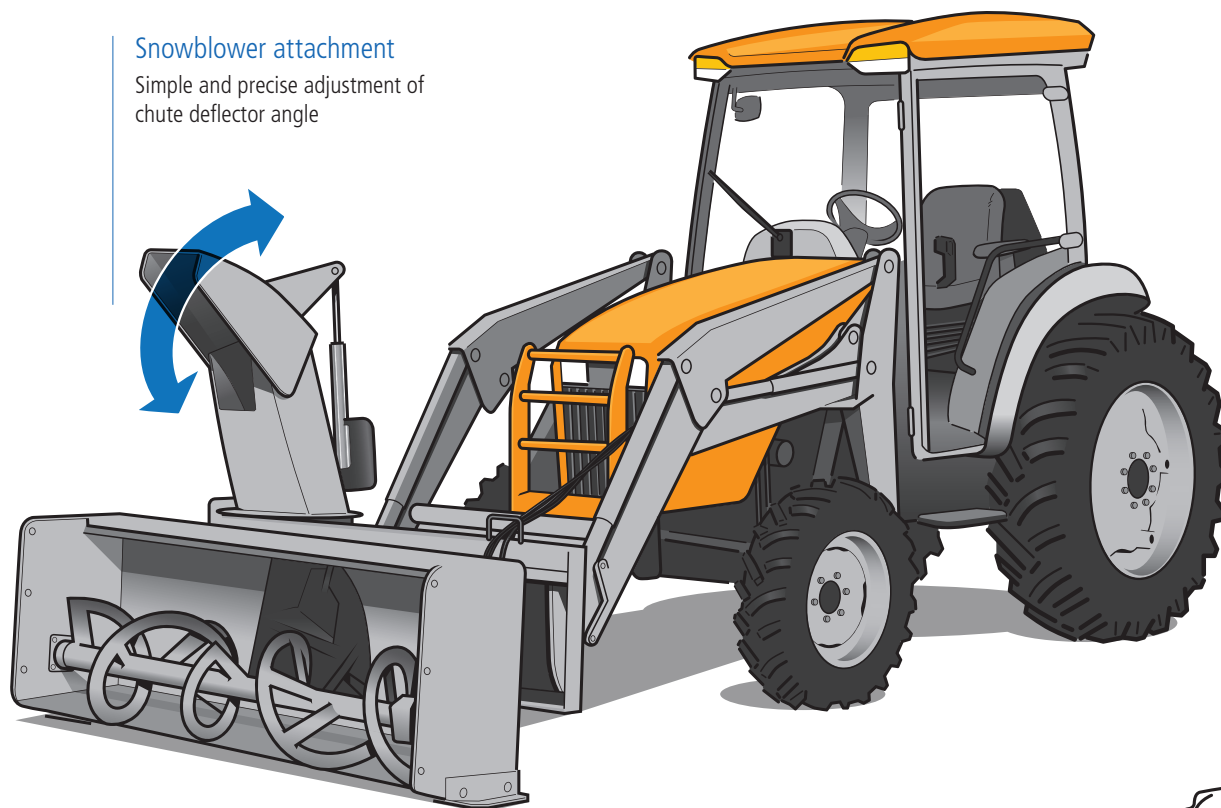


Top dresser

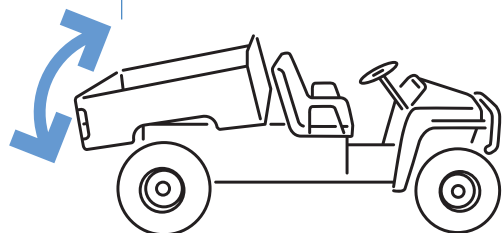


Snowblower attachment

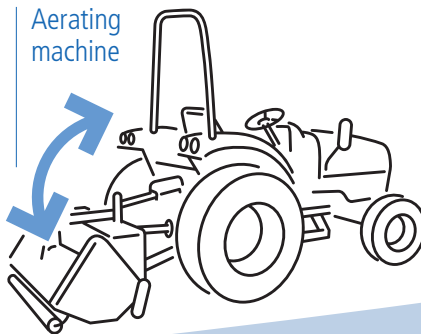
Simple and precise adjustment of chute deflector angle



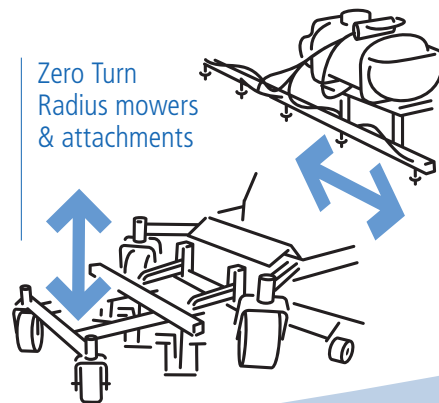
Utility vehicle



Aerating machine



Zero Turn Radius mowers & attachments



Explore the rich technology behind actuators

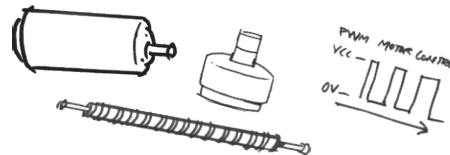
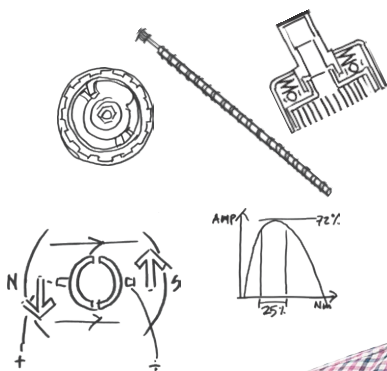


At the Actuator Academy™, you will find a library of videos and information about actuator components, actuator testing, and intelligent actuator control.

Find out what you should expect of a good industrial actuator, what affects its performance and efficiency, and how to best utilise your linear motion actuator.

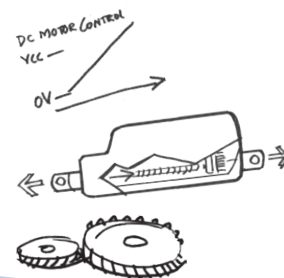
We hope to inspire you and ultimately make you wiser on the moving electric revolution we are all part of.

Happy exploring!

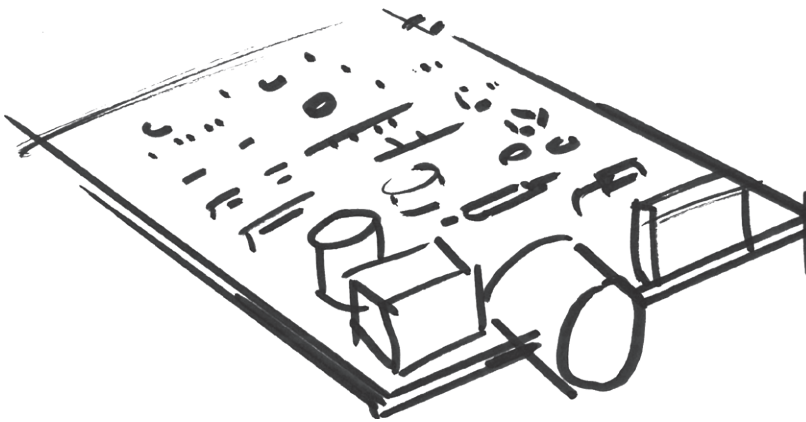


Check out the
Actuator Academy

**LINAK.COM/
ACTUATOR-ACADEMY**



Smart movement for outdoor power equipment



A LINAK® IC actuator with built-in controller reduces the number of external components and the need for a third-party supplier for power electronics.

It also offers a comprehensive range of interfaces and gives you access to productivity enhancing data - all delivered by a single supplier you can trust.

By helping you move smarter at every stage of your application process, from development, installation and integration to tailored movement and improved productivity, our IC actuators add value across the board.

IC INTEGRATED CONTROLLER™

Choosing an IC actuator for your application is a smart move in many ways:

- Reduced complexity for faster development and production
- Flexible integration with a variety of industrial interfaces
- Data monitoring that minimise downtime and boost productivity
- Benefit from one single supplier



For more information on IC, please visit [LINAK.COM](https://www.linak.com) or scan the QR code.

Actuators for outdoor power equipment

With **thrusts up to 15,000 N**, **max speeds up to 160 mm/s**, and **strokes between 20 and 999 mm**, the actuators are highly adaptable for a wide variety of applications.

Industrial actuators with **heavy-duty aluminium housings** are very suitable for use in corrosive environments. Having been thoroughly salt spray and **chemical resistance tested** and approved for ratings up to **IP66 and IP69K static**, these actuators will work reliably for years, even when exposed to salt, water, wind, and sun.

Operating temperatures between -40°C to +85°C make them fit for work in numerous settings.

Actuator LA30*



* Not available with Integrated Controller (IC)

Actuator LA37



Actuator LA36



Actuator LA33



Accessories for outdoor power equipment



Motor controller TR-EM-208

- Complete control

- Variable power supply 12-36 V DC
- Overload protection - adjustable current limit 1-20 A
- IP66 for outdoor use
- Adjustable soft start and stop
- Several versions for different applications
- Integrated brake (*)



Rocker switch

- Easy operation

- For all actuators with limit switches
- Easy operation of actuators without use of further electronics
- IP66 for outdoor use
- Easy to install
- Tested with an LA36 12 V DC for 50,000 operations (*)



Parallel controller TR-EM-239

- Complete control

- Synchronised parallel control for 2 actuators
- Operates with pulse feedback (Hall or Reed)
- Current and temperature limited
- IP66 for outdoor use
- Soft start/stop
- Adjustable drive speed
- Accurate repeatability
- Easy setting via serial interface (*)

(*) "The specified product is a third party product that is produced by third party and distributed by LINAK® as a supplement to LINAK existing product range. It is the responsibility of the product user to determine the suitability of the product for a specific application. LINAK will at point of delivery replace/repair defective products covered by the warranty if promptly returned to LINAK."



If you use Integrated Controller (IC) there is no need for these accessories!

Actuator LA25



Actuator LA14



Actuator LA12



Testing programme

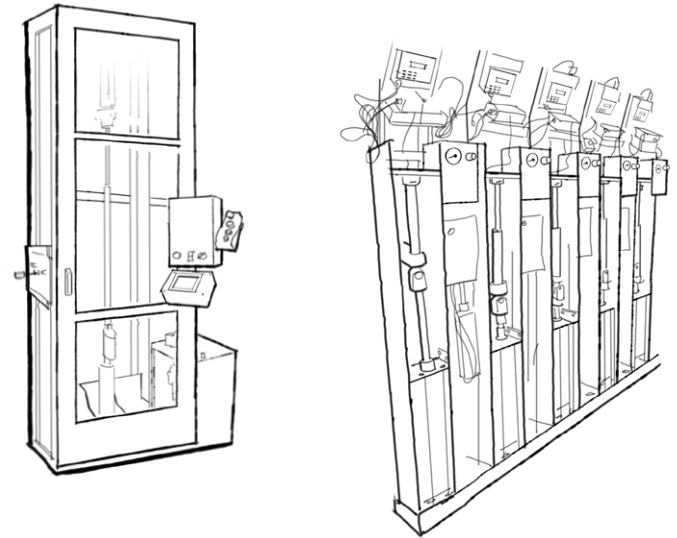
In each industrial application, the actuator is just one component of many, but at LINAK® we fully appreciate that it is of utmost importance to you and your customers. Not a single actuator leaves the factory until it has undergone a 100% function test.

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.

“Our actuators must never malfunction. Therefore, it is important that all our products are tested inside and out, and to the extreme in a wide range of tests.”

- Claus H. Sørensen, Director R&D



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 and still maintain full functionality and ingress protection.

EN60529-IP6X

- Dust

EN60529-IPX6

- Water

ISO16750- IP69K

- High pressure cleaning

IEC60068-2-3

- Moisture storage

IEC60068-2-30

- Operation in moisture

ISO16750-4:2010

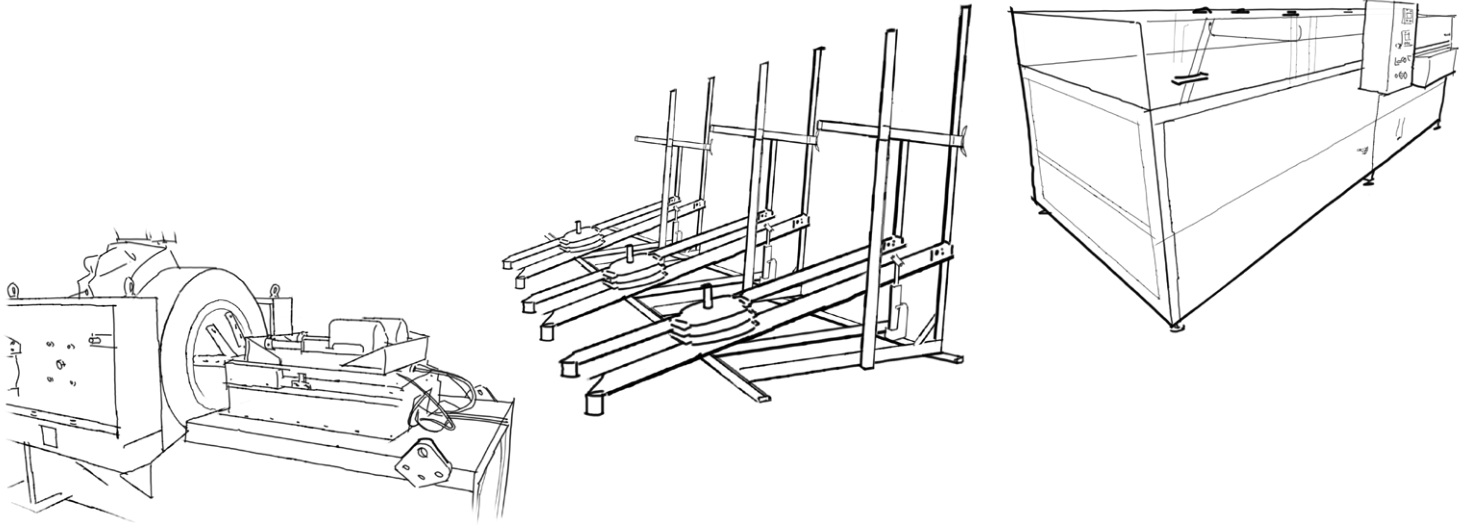
- Dunk test

EN60068-2-52

- Salt spray

BS7691 Section 6.11.2.4

- Chemicals



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	- 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

* These tests do not apply to third party products!

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 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) - Random vibration

EN60068-2-27 (Ea) - Shock

EN60068-2-29 (Eb) - Bump

Find out more about how we test actuators to the extreme:

linak.com/segments/techline/tech-trends/testing/





For further information, please visit our website:
LINAK.COM/BUSINESS-AREAS/OUTDOOR-POWER-EQUIPMENT/

LINAK® accepts no responsibility for possible errors or inaccuracies in catalogues, brochures, and other material. LINAK reserves the right to change its products without prior notice. LINAK cannot guarantee product availability and reserves the right to discontinue the sale of any product. User is responsible for determining the suitability of LINAK products for a specific application. All sales are subject to the 'Standard Terms of Sale and Delivery', available on LINAK websites.

LINAK and the LINAK logotype are registered trademarks of LINAK A/S. All rights reserved.



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



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



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



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