Focus on
Outdoor Power 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

**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. This allows you to design innovative and flexible solutions for your customers.

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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
Cutter blades
Individual adjustment of the cutter blades

Engine hatch
Opening and closing of the engine hatch for effortless, quick access
What LINAK actuators do for the lawn mower

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Bagger lid
Opening and closing of the bagger lid

Bagger
Tilting of the bagger
Mower deck
Raising and lowering the mower deck
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
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 outdoor power equipment, 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 welltested 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.

For more information on IC, please go to LINAK.COM/SEGMENTS/TECHLINE/TECH-TRENDS/INTEGRATED-CONTROL/
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™
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.

By using an integrated controller, industrial actuators are **configurable** and offer **relative or absolute position feedback** as well as **performance monitoring**.

*Actuator LA30*  
*Not available with Integrated Controller (IC)*
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
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.*

- 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!
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.

- **EN60068-2-1 (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
For further information, please visit our website:
LINAK.COM/BUSINESS-AREAS/OUTDOOR-POWER-EQUIPMENT/

TERMS OF USE
The user is responsible for determining the suitability of LINAK products for a specific application. LINAK takes great care in providing accurate and up-to-date information on its products. However, due to continuous development in order to improve its products, LINAK products are subject to frequent modifications and changes without prior notice. Therefore, LINAK cannot guarantee the correct and actual status of said information on its products. While LINAK uses its best efforts to fulfill orders, LINAK cannot, for the same reasons as mentioned above, guarantee the availability of any particular product. Therefore, LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or other written material drawn up by LINAK.

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