

Focus on
Trucks



www.linak.com/techline

LINAK® 
WE IMPROVE YOUR LIFE

Trucks - Easy control and high reliability

Lowering weight and improving energy efficiency in trucks

Better fuel mileage is a key factor in the world of modern logistics. The ability to get the best possible fuel efficiency will ensure a profitable return on investment. Electric actuator solutions reduce the truck weight and optimise aerodynamics thus improving overall operational efficiency and reducing emissions.

Why reduce weight?

Using a modern LINAK actuator system for cabin tilting allows you to reduce weight located on the front axle. This enables an increase of cargo, which is important to be competitive without exceeding the maximum gross vehicle weight. Reducing the weight on the front axis of the truck also provides a better weight ratio between the axles and allows for a higher total payload.

Why optimise aerodynamics?

For trucks, drag is a major factor in the fuel efficiency equation. Aerodynamics does not only play a major role for the emissions, but for the noise level as well. Even if the cab is streamlined, drag is created when the turbulent air accelerates around the sharp edges of the trailer. In order to lower drag it is important to be able to adjust the wind deflectors on the cab and thereby reduce emissions.

LINAK actuators for trucks

Providing improved ergonomics and comfort as well as easy installation and adaption to main control systems make LINAK actuators a beneficial choice for many mobile applications. Particularly for a wide variety of trucks and other heavy-duty vehicles, the actuators are well-suited due to their easy control, well-proven reliability and long maintenance-free life even under extremely rough conditions.

Compared to hydraulic solutions electric actuator systems have the following advantages.

Actuators:

- are user-friendly
- are environmentally safe
 - no leak from oil
- are easy to install
- take up less space
- have built-in electrical feedback
- have lower total cost; no pipes and pumps, only cables

LINAK has been a supplier to off-road vehicles, construction and agricultural equipment for 30 years. With the extensive development and testing made, the company possesses a wide knowledge of both electromechanical and environmental demands. A knowledge now directed towards the truck segment.



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



What the LINAK actuators do for the **Truck**

LINAK® possesses in-depth knowledge of the market and the opportunities truck manufacturers have for using LINAK solutions.

In cooperation with our customers, we have developed solutions for service situations, increasing operational efficiency, driver ergonomics and truck safety. LINAK actuators provide easy installation and operation while offering a lightweight solution that has been thoroughly tested for harsh environments.

Hood Tilt

Tilting the hood for easy access to all service areas

Cabin Tilt

Tilting the cabin on trucks with COE for full access to the motor. A lightweight solution that combines electrical tilt with a manual backup system



Locking mechanism

Locking of the cabin when in driving position to avoid cabin tilt. Functions as a complete system together with the cabin tilt



Wind deflector

Adjusting the wind deflector easily from the cab for optimised aerodynamics between the cabin and trailer to reduce drag, thus achieving better fuel efficiency

Exterior mirror

Easy adjustment of the exterior mirrors

Lower bunk

Adjusting the lower bunk into different positions for increased comfort and an optimised working environment

Fifth wheel

Remotely operating the fifth wheel locking from the cabin increases driver safety and convenience

Fifth wheel slider

The actuator provides a secure system with no mislocking and feedback on the slider position so the driver knows when the slider is locked and safe

Underrun protection

Adjusting the movable bumper for increased safety

Spare wheel

Locking of the spare wheel

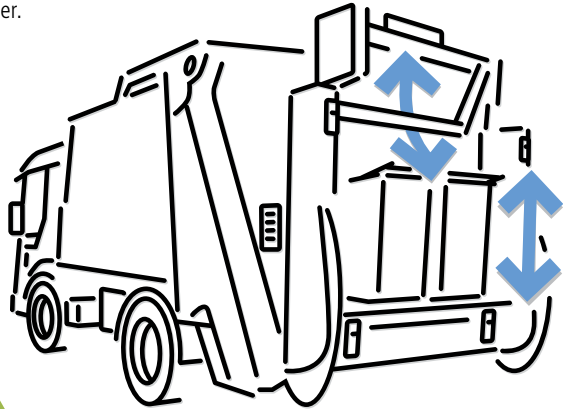
Steps

Folding out steps for easy access to the truck

A world of movement & opportunities for heavy-duty vehicles

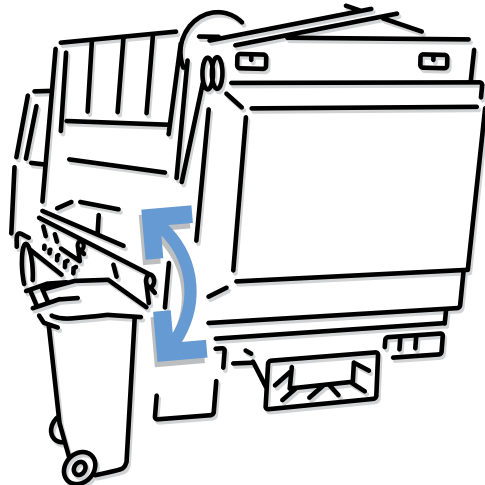
heavy-duty vehicles

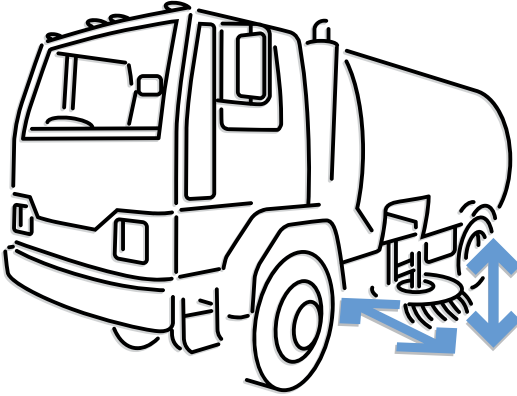
For heavy-duty vehicles, it is often critical that products work under extreme conditions. LINAK electric actuators have been extensively tested and their rigid quality make them ideal for use in harsh environments with dust, dirt and water.



Garbage truck

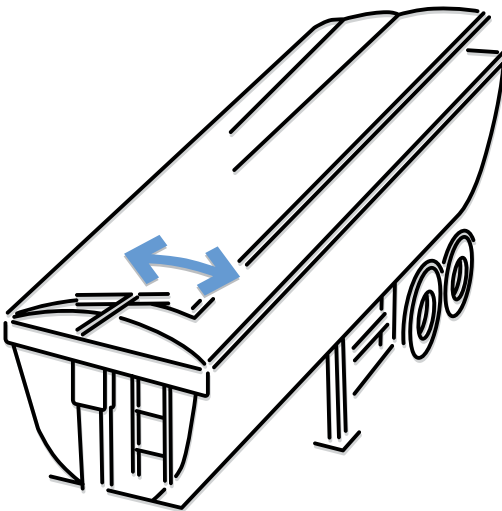
Adjusting mirrors, bins and buffer rails on rear loaders, as well as clamping bins to bin lifters on side loaders for safe emptying





Road sweeper

Adjusting the position of the brushes to provide easy control, increase efficiency and reduce the wear of the brushes. Opening and closing doors for waste disposal



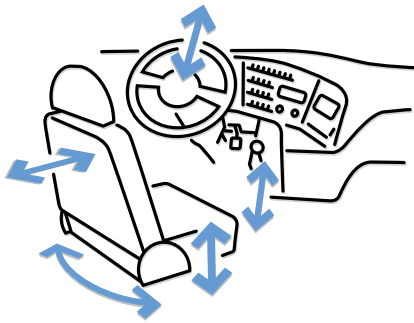
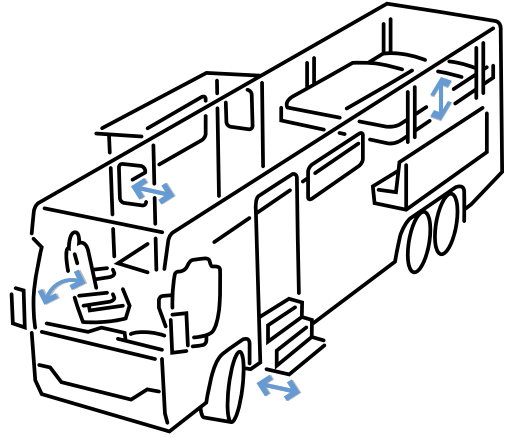
Truck trailer

Opening and closing the bulk coverage to ensure nothing is blown off the trailer



Motor home

Lifting or tilting the bed frame for optimal utilisation of the space inside the motor home. Adjusting steps, the driver's seat, a slide-out wall and various other applications

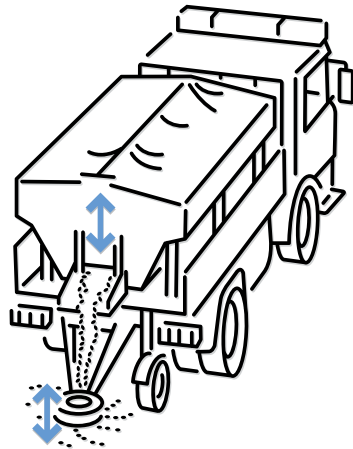


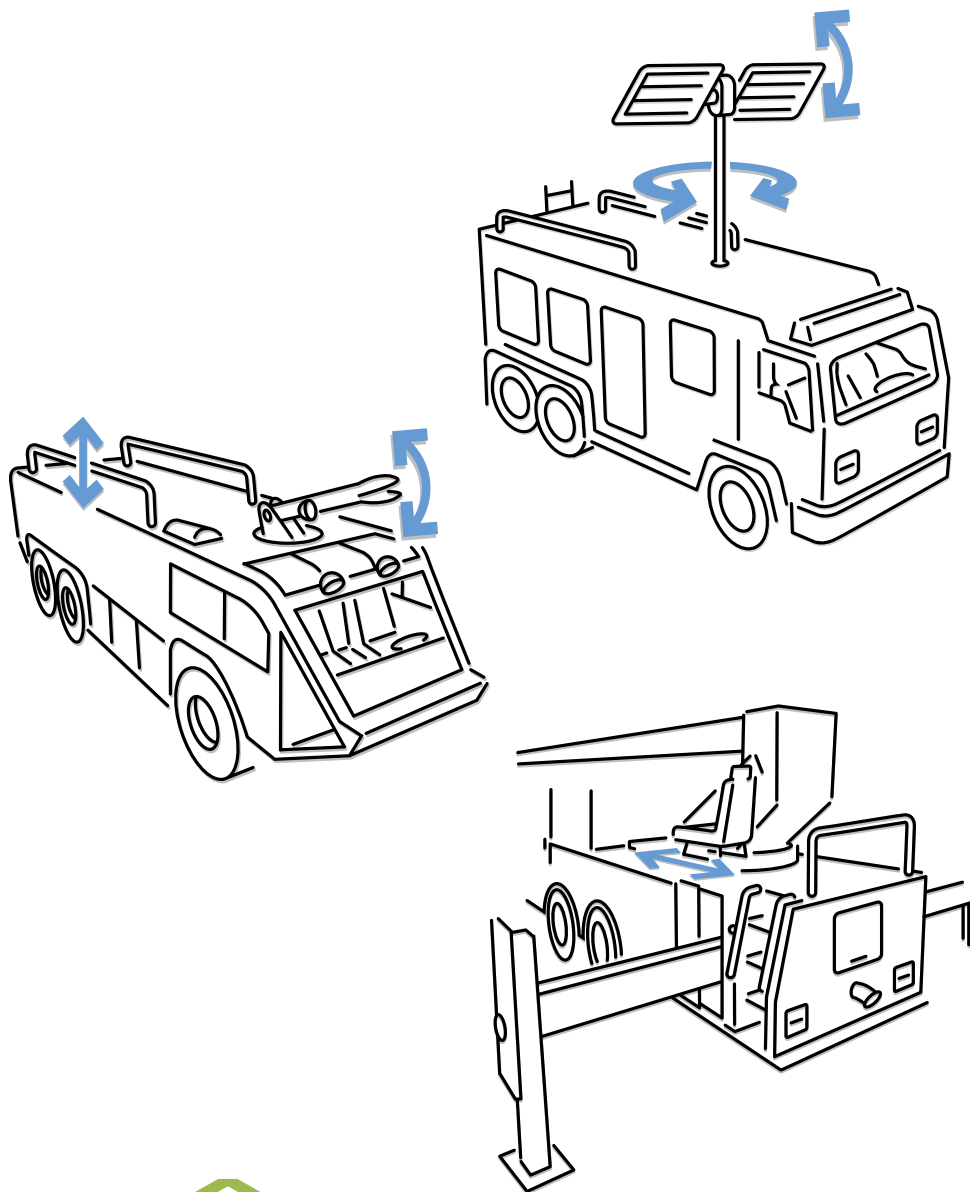
Seat and steering wheel adjustment

Adjusting the driver's seat and the position of the steering wheel for comfort in both the truck and the bus

Salt truck

Adjusting the amount of salt and precise controlling of where the salt is spread onto the road





Fire truck

Monitoring and adjusting the spray valves on the fire truck for precise control of the amount of water sprayed out. Adjusting spotlights as well as the seat from where the ladder is steered. Regulating rails on the roof for safety reasons

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 trucks

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 trucks, 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.
- The actuator can be connected directly to the ECU or BUS-node.
- 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 trucks

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
- Protection class IP66 / IP69K
- Voltage 12, 24 or 36 V 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
- 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™**



Actuators for trucks

Actuator LA35 - flexible and powerful

The actuator LA35 is a powerful actuator with a low noise level. It is designed for a variety of both indoor and outdoor applications and provides a practical, cost-effective solution with low power consumption.



LA35 features:

- Max thrust up to 6,000 N in push and up to 4,000 N in pull
- Stroke up to 600 mm
- Protection class IP66 dynamic / IP69K static
- Voltage 12 or 24 V DC
- Heavy-duty aluminium housing for harsh conditions
- Easy to use interface – with integrated power electronics for direct connection to control system
- Potential free limit switches as an option
- Hall sensors or potentiometer for relative or absolute feedback, regardless of the stroke length
- Built-in limit switches and brake
- **Available with Basic IC™**



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™**



Actuators for trucks

Actuator LA23 - small and strong

The actuator LA23 is a small and strong push or pull actuator with a high lifting force up to 2500N. The LA23 can be used in various applications where size is important.



LA23 features:

- Max thrust up to 2,500 N
- Max speed 9.4 mm/sec
- Standard stroke 20-300 mm
- Protection class IPX6
- Voltage 12 or 24 V DC
- Electrical and mechanical endstop
- **Available with Basic 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 $+85^{\circ}$ 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™**



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 websites:
www.linak.com/techline

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