

# Performer VS Express Snoot

Scientific Study

# Table of Contents

Purpose of the Scientific Study

5

Introduction to PostNord and how they use Caljan equipment

6

Focus on a greener supply chain

7

A sustainable work environment

7

Why the study is important

8

Scientific Study: Process description

10

Preparations

10

The unloading process

10

Motion capture with Xsens

10

Introduction to AnyBody Technology

13

Musculoskeletal Modeling software

13

Parameters

14

Vertical Displacement, Handling time, Energy Consumption

14

Unloading packages at lower levels

15

Unloading packages at higher levels

15

Results	16
Task Parameters	16
Energy consumption	16
Biomechanical outputs	16
Conclusion	17
Caljan Performer Telescopic Conveyor (CBP)	18
Specification	19
Features that enhance work environment	19
Caljan Performer with EXPRESS Snoot (CBP.ES)	20
Specification	21
Features that enhance work environment	21
About Caljan	22





**CALJAN**



## Purpose of the Scientific Study

We developed the EXPRESS Snoot in 2022, conducting numerous analyses to assess the strength of the articulating belt conveyor and its range of movement. The impact on packages transported along the belt, particularly over the transfer section, was also carefully evaluated.

A sports physiologist specialising in work/life balance and the effects of movement on the human body was brought in as a consultant through an international engineering firm to review how EXPRESS Snoot is used in the loading and unloading process. The insights he shared with the Caljan R&D team helped to refine the process and were also incorporated into training materials to educate users.

The development process concluded with extensive EXPRESS Snoot trials on-site with an international express parcel carrier. These trials, along with observations, user surveys and reports, provided valuable feedback that led to further optimizations in equipment functionality and user experience.

Our research suggests that Caljan Performer with EXPRESS Snoot helps users maintain ergonomic neutrality when moving cargo onto and off the conveyor belt. The majority of the work can be done by reaching just a short distance, often called the primary and secondary work zones. We define this as the Power Zone, i.e. between shoulder and hip.

In order to document the reduction of musculoskeletal strain facilitated by EXPRESS Snoot's unique Belt-2-Box concept, we leveraged software developed by AnyBody Technology. For benchmarking, we compared a Caljan Performer equipped with EXPRESS Snoot to a standard Performer telescopic conveyor without this optional function.

Building on this foundation, we have continued innovating to further improve workplace ergonomics. In response to evolving industry standards and global requirements for safer, more efficient working environments, we have since developed the [Caljan ErgoRider](#) – an integrated platform and conveyor belt that revolutionises the loading and unloading of loose-loaded cargo with a Performer telescopic conveyor. Having a unique free-hanging concept developed based on over 60 years of parcel handling expertise as well as the insights gained from this scientific study, the ErgoRider sets a new standard in efficiency and workplace safety.



postnord

## Introduction to PostNord and how they use Caljan equipment

Handling 243 million parcels a year, PostNord AB has 9500 distribution points in the Nordic region. The state-owned company was formed in 2009 in a merger between Danish and Swedish postal services. PostNord deploys a standard hub and spoke process with collection from customers, transport to the hub, sortation and regional transport to a local terminal. Distribution is the same sequence in reverse, with linehaul connecting the two halves. Although roll cages are used to transport packages between customer/hub/customer, the linehaul operation is all loose, or floor-loaded.



## PostNord in Numbers

# 243

→ million parcels a year

# 9 500

→ distribution points in the Nordic region

# 24 500

→ employees

## Focus on a greener supply chain

PostNord, with 24,500 employees, is extremely proactive when it comes to sustainability. The overall goal is to create long-term value for customers, owners and other stakeholders through financial, environmental and social responsibility. The strategy encompasses a greener supply chain with a focus on reducing CO2 emissions, e.g. by deploying fuel-efficient and electric vehicles and by testing new fuel technologies such as HVO biodiesel and biogas. Emissions have been reduced by 44% since 2009.

PostNord are strong advocates of standardising weight limits for parcels and for loose cargo instead of pallets, which are not ideal for smaller boxes and polybags.

## A sustainable work environment

Work health agencies in the Nordic regions impose strict regulations and PostNord wants to be compliant. Through the years, assessments of the work environment in a predominantly manual process point to three prime physical issues, lift frequency, lift weight and lifting above shoulder height. Backache, headaches and pains in the shoulders and/or neck areas are reported during the annual employee discomfort surveys.

PostNord believes that correct posture is essential when working with logistics and trains their employees in bending and lifting techniques. Changing behaviour is a challenge, so in 2021, PostNord began exploring the feasibility of using wearables to help logistics employees move safely. Wearable devices, worn on the neck collar, between the shoulder blades or on the arms, register how the user moves. Initial results reveal poor bending to be the main problem, resulting in pain in the lower back. PostNord will continue working with wearable devices.

Providing the right work tools is equally important. To improve the working environment for employees unloading loose-loaded cargo in the terminals, PostNord has invested in Caljan Telescopic Boom Conveyors. Various configurations have been tested, including the [Caljan Performer](#) with a vacuum lifting aid and the Caljan Performer with [Express Snoot](#).

## Why the study is important

Over 8% of the global workforce is employed within the transport industry. Making physically demanding tasks within the supply chain easier and more efficient has been a priority for the logistics industry for decades. In recent years, parcel carriers have been challenged by smaller generations, an ageing workforce and difficulties recruiting and retaining employees. Other industries are perceived as being more attractive.

This headache has been amplified by the paradigm shift in consumer behaviour brought on by the global COVID-19 pandemic. Prevented from making their purchases in malls and on the high street, consumers transitioned to online shopping. The rapid growth of e-commerce which began during the pandemic, has now slowed, but the sales volumes from online shopping are still higher than in bricks-and-mortar stores, and this trend is not going anywhere. All the parcels, packages and bags still must be collected, carried, sorted and distributed. Although some parts of this process have been automated in recent years, the loading and unloading of containers/trucks and trailers has remained largely manual.

Although Caljan is developing a program of automatic equipment to load/unload, we acknowledge that these alternatives are not realistic for everyone. Our sales team and product managers advise customers on which Telescopic Conveyor configuration would best fit their specific requirements.

Naturally, customer criteria like cargo (type, volume, size and weight), vehicle fleet, workforce composition, etc. are significant. Application, and frequency of use, also play a role. Lately, however, the driving factor is optimizing the work environment. Goal 8 of the Sustainable Development Goals (SDGs) adopted by the United Nations Member States in 2015, stipulates that employers must provide the best possible working environment for employees.

When we became aware of the technology used in this study, we saw an opportunity to take product comparison to the next level. In addition to working with our own technical data, we would be able to study the differences between measurements taken of the biomechanics involved. To have value, the study must be based on realistic data, representative of real-life. The set-up must be identical for both situations, with the exception of the equipment used to facilitate unloading.

PostNord use Caljan Performer and Caljan Performer with Express Snoot at the Torsvik hub in Sweden. This site was selected for our purpose, and we asked PostNord if they would participate in the study allowing us to collect data.

PostNord has been working with sustainable work health for some time. Employee surveys confirm that discomfort in the shoulder and spine is common among logistics employees. In 2021, the company introduced training courses and tests with wearables. Exoskeletons were also tested on employees using Caljan Telescopes. Being involved in the scientific study was perceived as an excellent supplement to these activities.







# Scientific Study: Process description

## Preparations

Two doors, one served by Caljan Performer Telescopic Conveyor and the second served by Caljan Performer with EXPRESS Snoot were selected for this study. A trailer filled with a variety of parcels, packages and padded envelopes was positioned behind the first door.

A PostNord employee, familiar with the task of unloading and trained in using Caljan Performer and Caljan Performer with EXPRESS Snoot, was assigned to the study.

To give an accurate simulation, the AnyBody Technology software requires the characteristics of the individual to be modelled. Throughout this paper, the individual is referred to as the user. In addition to the user's height and weight, other parameters like the height of the user's feet, the shoulder-to-shoulder width and the length of the forearm were registered, too. This data is used to align the markers from the body motion capture to the ABT Model, developed by AnyBody.

To register body motion during unloading, the user wore garments with built-in sensors developed specifically for this purpose by Xsens Technologies. The sensors were positioned on the feet, the lower legs, the upper legs, the pelvis, the sternum, the shoulders, the upper arms, the forearms, the hands and the head.

All movement registered is transferred via a BioVision Hierarchy file format, to the ABT Modelling System. The BVH file type contains motion capture data for three-dimensional characters. The ABT Model repository used by the software contains models of the lower extremities, pelvis, spine, rib cage, shoulders, upper arms, incl. forearms and hands. The model, comprising individually activated muscle fascicles, uses inverse dynamics to convert motion into internal muscle initiation and joint reaction forces. Other biomechanical parameters, such as energy expenditure, are included too.

Muscle strength is scaled according to the Body Mass Index of the user, using the length-mass-fat scaling law (Rasmussen et al, 2005). BMI is a person's weight divided by the square of the person's height. Motion and external forces are imposed onto the relevant model.

## The unloading process

The user was instructed to unload the cargo naturally in the way he had been trained. In the first part of the study, Caljan Performer was used to unload 40 packages of various weights and dimensions. These were intercepted and manually removed from the rear end of the Telescopic Conveyor so they could be reused in the second part of the study. Each package was subsequently numbered, measured and weighed.

The trailer was then moved to the second door and the 40 packages were manually returned to the trailer.

The parcels were unloaded by the user once again. This time with the assistance of Caljan Performer with EXPRESS Snoot.

For the purpose of this study, a comparison has been made between 16 packages. The dimensions and weights of the packages can be seen in the table on page 12. The position of the packages inside the trailer can also be seen. Distance F indicates the position relative to the floor of the trailer. Distance S indicates the position relative to the belt of the Telescopic Conveyor. These packages have been selected to give the most comprehensive comparison possible.

## Motion capture with Xsens

The technology behind body motion capture is often used in filmmaking and video game development, where lifelike, fictional film characters are created based on the movements of humans and animals. The AnyBody Computer Model integrates Xsens 3D body motion data to accurately represent the movement of the user. Musculoskeletal models are digital human body models that can be used to calculate internal and external loads such as muscle forces, joint reaction forces, spine forces or ground reaction forces solely by the input of a given motion. These models can be used to calculate, for example, spine loads during lifting.

The technology behind the sensors worn by the user is based on inertial measurement units and sensor fusion (Konig et al, 2015). The suitability of the technology for recording musculoskeletal input has been verified in various scientific papers (Karatsidis et al, 2018).

Xsens, part of the mCube group, is the leading innovator in 3D motion tracking technology. The core of Xsens technology is Sensor Fusion. Data is collected from different elements to provide highly reliable mGotion tracking. Xsens products can be divided into three categories:

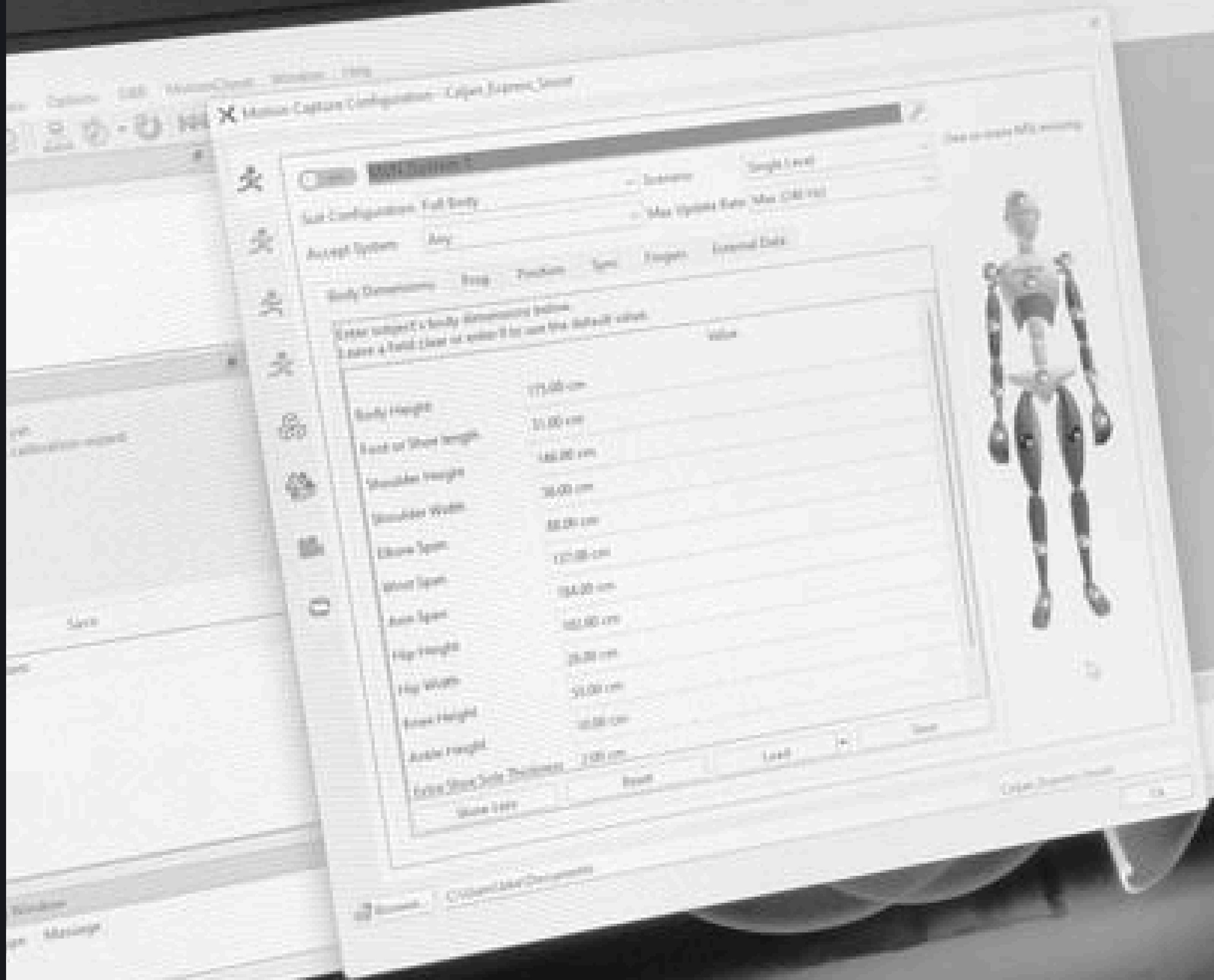
- Inertial Sensor Modules – providing location for autonomous vehicle navigation;
- Wearable Sensors – used in human kinematics;
- 3D Body Motion – captures inertial motion data.

Xsens 3D body motion captures data in field conditions, saving a digital recording. The data is then exported in a .BVH format to the AnyBody software. Markers from the Body Motion data are aligned to the AnyBody Model. An algorithm is run to optimize the match between models. Inverse dynamics are then computed, and the forces and the movements are calculated. Additionally, ground reaction forces are determined using kinematic data.

Once the data is processed, the variables can be plotted into a graph and an animated figure can be created. This shows how the user moves when unloading the packages. The enhanced accuracy of body motion capture over the last decade has made it increasingly more popular in biomechanical studies.









# Introduction to AnyBody Technology

Established in 2001 by academics working as university researchers, AnyBody Technology A/S is a pioneer and leading provider of mechanical modelling of living beings, in particular humans. Their Musculoskeletal Modeling Software is used worldwide to analyse workplace ergonomics and the efficiency of assistive devices.

Medical companies, often specialising in orthopaedics, consult with AnyBody Technology, using the simulation software as a natural element to understand physiological forces on bones and devices when developing orthopaedic implants and artificial joints.

The Software is also deployed by the sports industry to identify injury risks and develop sports equipment. Automotive industries use the Software to design cars that are ergonomically optimized for all occupants and to optimize driver/vehicle interaction.

Universities in all parts of the world use simulation technology in their research, e.g. Exoskeleton development, amputee motion and prosthesis design, gait analysis and motion synthesis.

The scientific study you are reading is the first use of the Musculoskeletal Modeling Software in the logistics industry. The Musculoskeletal Modelling Software analyses to what extent the Caljan Performer Telescopic Conveyor fitted with EXPRESS Snoot improves the working environment when loading/unloading loose (i.e. not palletized) cargo.

## Musculoskeletal Modeling software developed and used by AnyBody Technology

Pioneers in the field of computational biomechanics and analysis of body movement, AnyBody Technology (ABT) has developed software that uses models of each part of the human body to investigate the mechanical functions and analyse the effort required for specific activities/movements.

In principle, the Musculoskeletal Modeling Software is a simulation engine that contains data pertaining to the 206 bones that make up an adult human skeletal system, plus the muscles, joints, tendons and ligaments the musculoskeletal system uses when we move any part of our body.

The unique collection of models has been developed in research projects at academic institutions by dissecting and analysing real body parts and then transforming the data into digital and mechanical elements. All data has been validated by partners with the relevant expertise. The ABT Managed Model Repository contains exceptionally detailed models that can be scaled anthropometrically to fit a specific person or population.

The Musculoskeletal Modelling Software can calculate how the body is affected – the load and energy required – when performing various movements. Measuring in real time inside a person is not feasible, so the Musculoskeletal Modelling Software is a good alternative to help us understand how biomechanical and ergonomic features and lifting aids perform in concert with the human body.

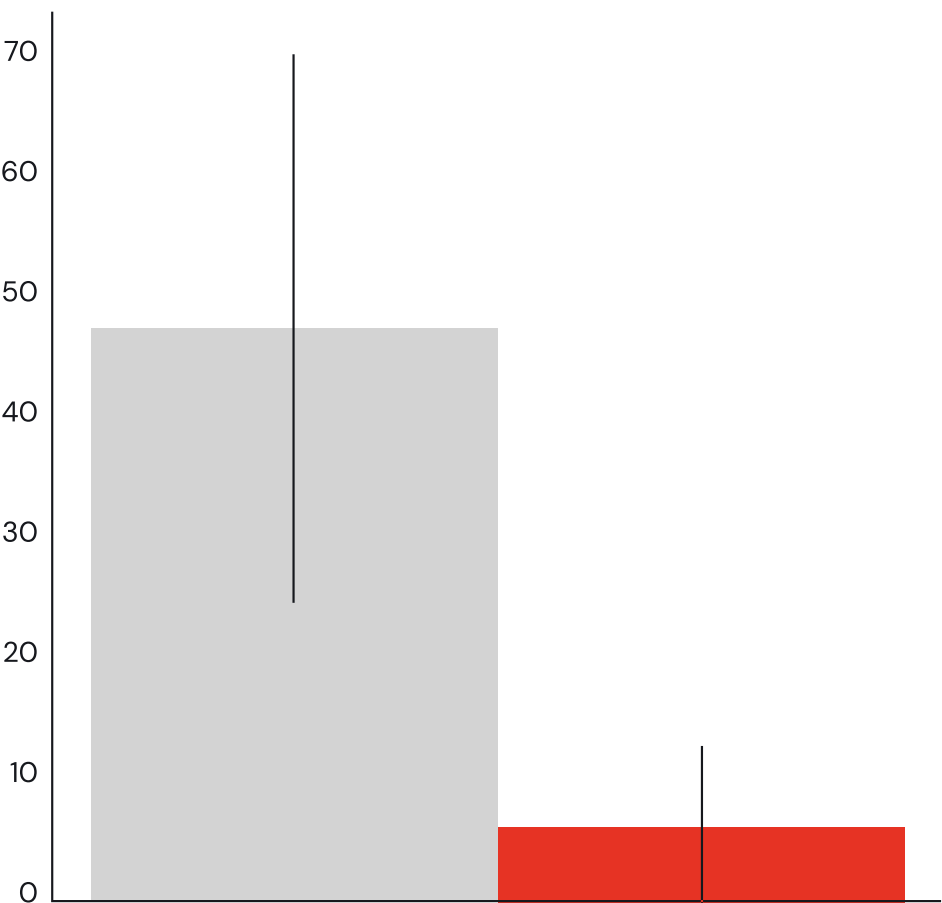


Figure 1: Vertical displacement [cm]

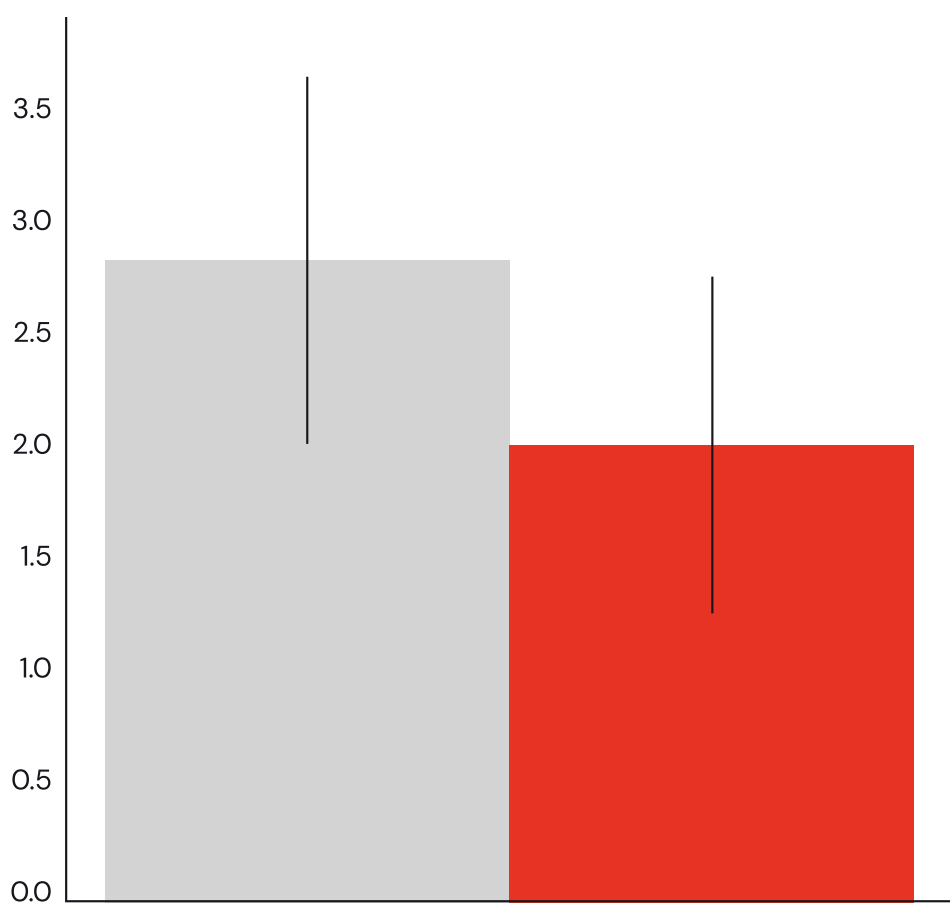


Figure 2: Handling time [sec.]

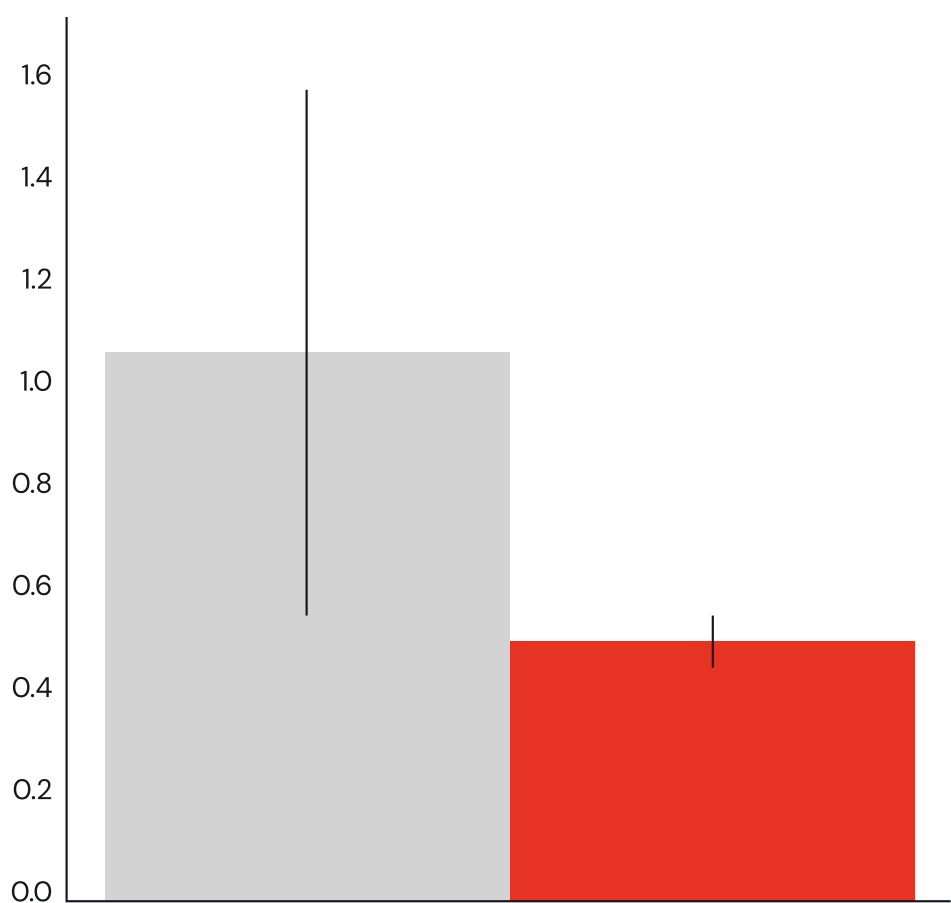


Figure 3: Energy consumption [kJ]

● Performer      ● Express Snoot

## Parameters

In all the charts, the black line shows the standard deviation between actual measurements for all parcels, i.e. the variation registered during the actual unloading situation. The block (light gray for Performer and red for EXPRESS Snoot) shows the mean, or average, to give a more visual comparison.

### Vertical Displacement [cm]

Figure 1

Vertical displacement is the absolute value of the difference between the vertical coordinate of the parcel at destination and origin, in other words, the distance between the height of the parcel in the trailer and the height of the belt on the conveyor.

### Handling time [sec.]

Figure 2

The readings show that transferring packages to the belt was considerably faster when using EXPRESS Snoot. Handling time is the duration between grabbing and releasing the parcel. The time taken to move the equipment is not included.

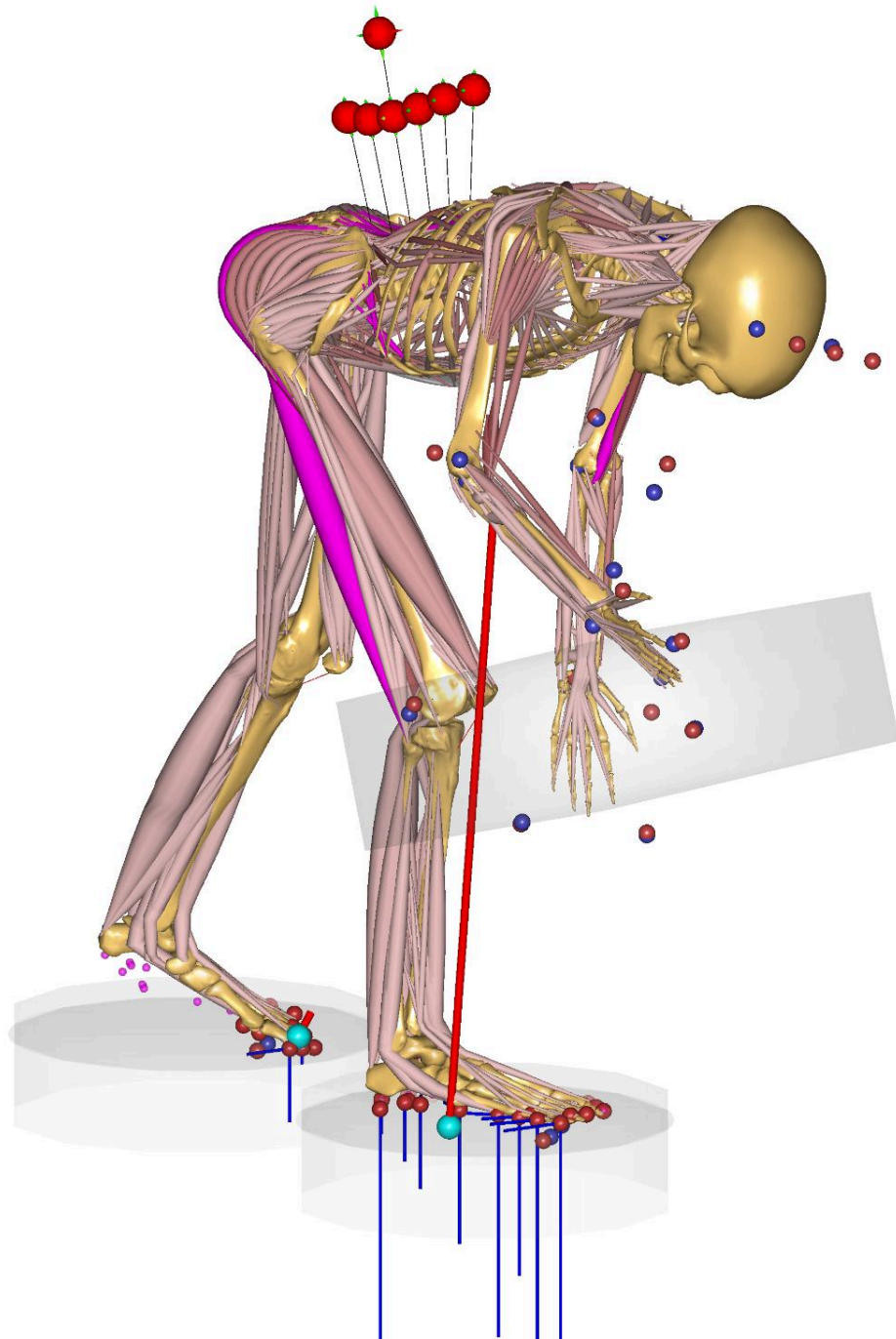


Figure 4: Poor lifting techniques can result in muscle strain

### Energy Consumption [kJ]

Figure 3

The graph shows the total energy consumption during the unloading task. Again the black line shows the standard deviation and the blocks show the average or mean for the packages unloaded. As you can see, energy consumed when using Caljan Performer with EXPRESS Snoot is significantly lower. The unique Belt-2-box concept that characterises EXPRESS Snoot means the vertical displacement of each package in relation to the belt is minimal. This reduces the handling time and the energy required to move the package onto the belt. On average half the energy is required when using EXPRESS Snoot compared to Performer.

The drawing shows muscle activity used when lifting package 8 onto the Caljan Performer. Positioned towards the centre of the trailer, at floor level, package 8 weighs 3.6 kg.



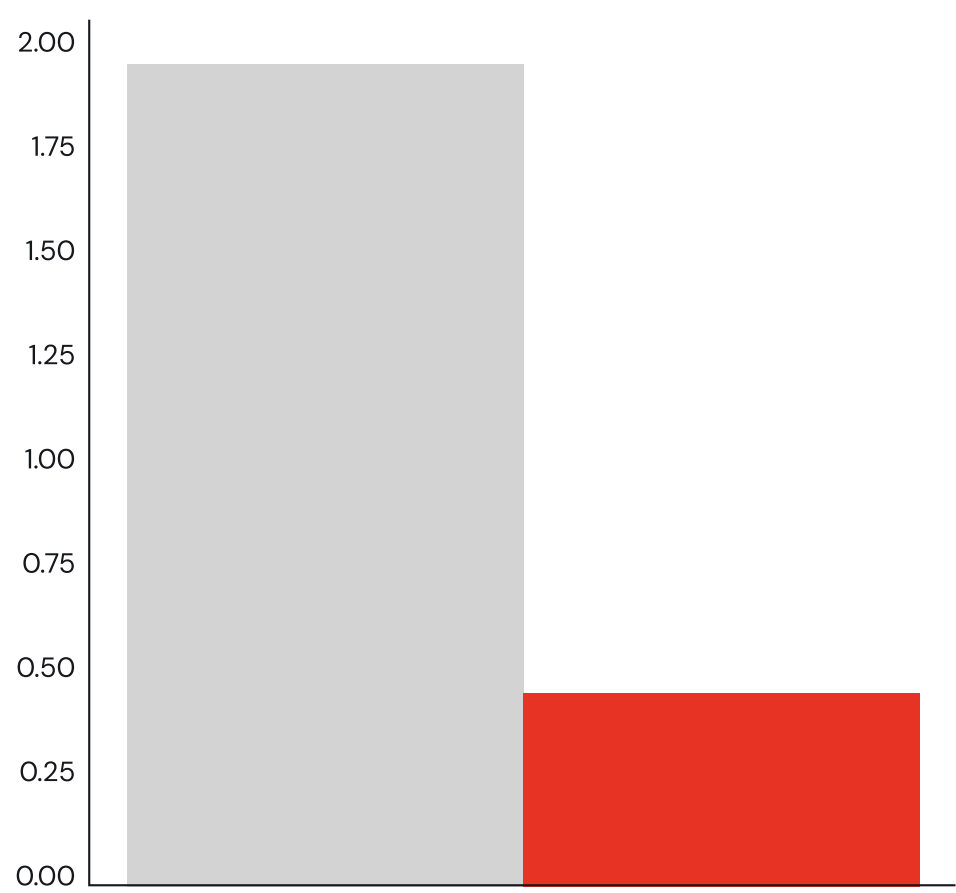


Figure 5: Total energy consumption (lower level unloading)

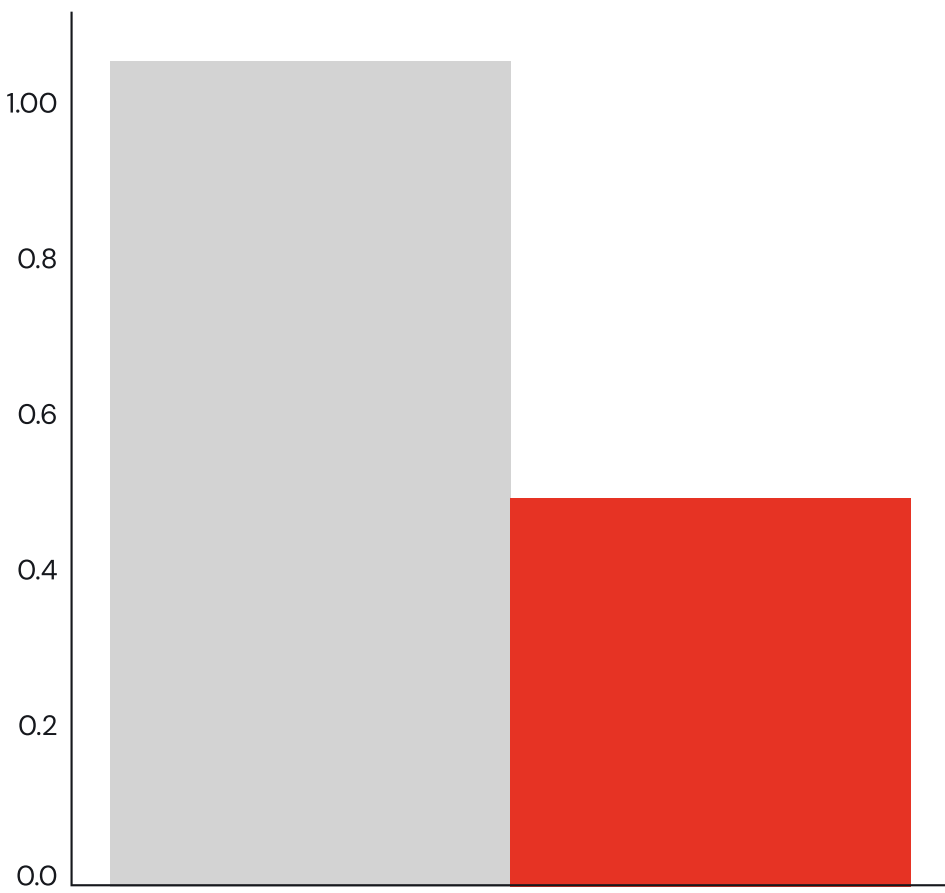


Figure 6: Total energy consumption (higher level unloading)

● Performer      ● Express Snoot

## Unloading packages at lower levels

Figure 4 and 6

When unloading packages positioned in the bottom half of the trailer, higher muscle activity is seen in the lower part of the body, the upper forearm and the core muscles around the abdomen and lower back. The energy consumption when unloading a package which weighs just 3.6 kg, without lowering the Performer reached 1.85 kJ. In comparison, the energy consumption when using EXPRESS Snoot was less than 0.50 kJ.

## Unloading packages at higher levels

Figure 5

Energy consumption and peak muscle activities increase when using the Performer to unload packages from the top half of the trailer. The muscle activity for the shoulder when unloading a package that weighs 11 kg, was 1.4 when using Performer and 0.6 when using EXPRESS Snoot. Energy consumption when using Performer to unload that package lies just over 1.0 kJ. When using EXPRESS Snoot to perform the same task, energy consumption is reduced by 50%.

The blue and red dots around the figure indicate how the data from the motion sensors has been matched with the Models in the AnyBody Modeling Software, to provide an accurate visualisation of the movement. The joint reaction force is indicated by the larger green, yellow and red dots, in this instance, extending from the lumbar region.

These visualize the force required in relation to NIOSH norms. NIOSH – National Institute for Occupational Safety and Health – is the United States federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness. The red and blue lines along the length of the body and under the feet represent ground reaction forces.

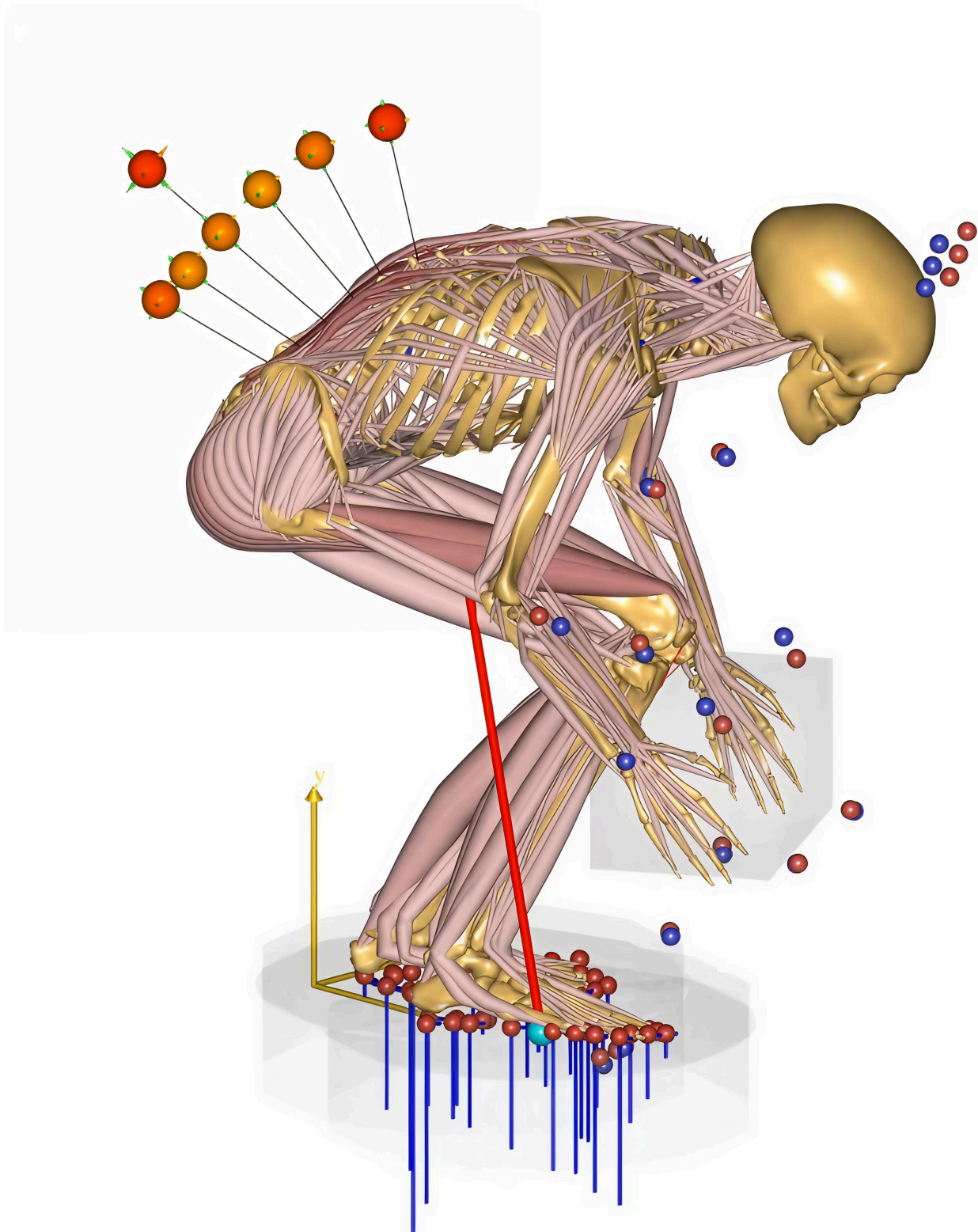


Figure 7: Muscle activity used when lifting a package onto the Caljan Performer. Positioned towards the centre of the trailer, at floor level, the package weights 3.6kg



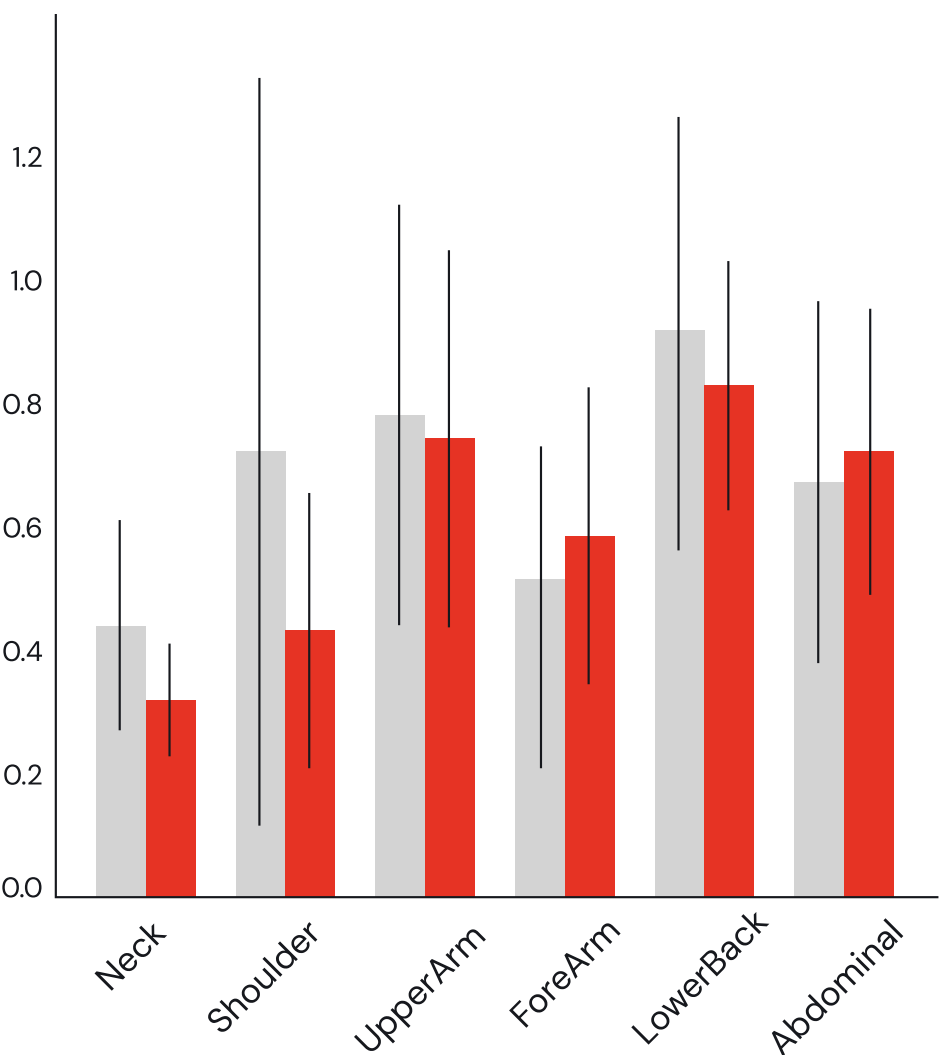


Figure 8: Average peak muscle activity (upper body)

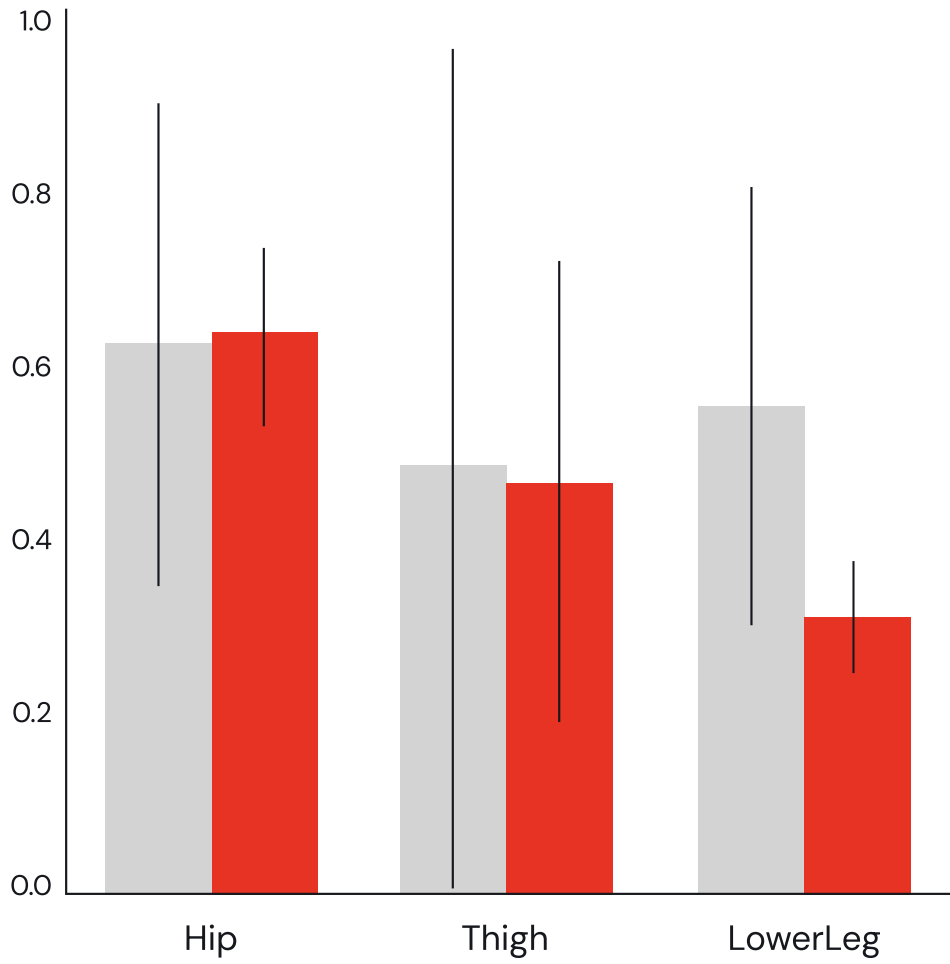


Figure 9: Average peak muscle activity (lower body)

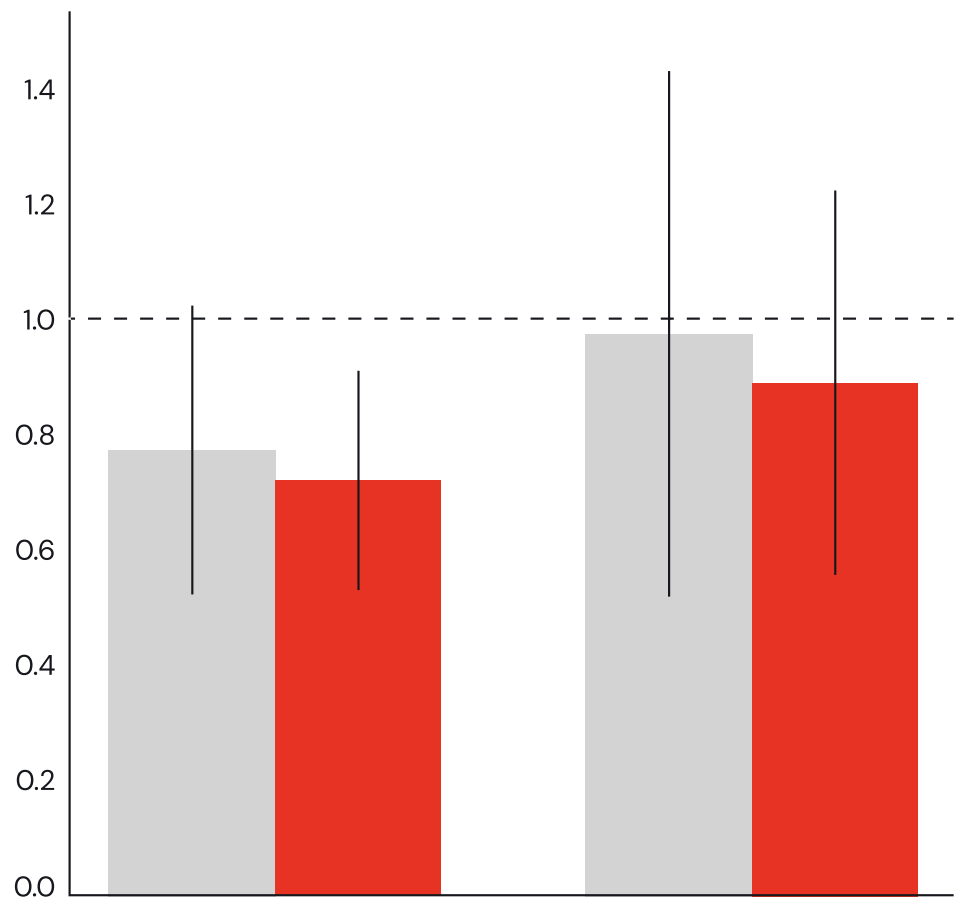


Figure 10: Normalized peak joint reaction

● Performer ● Express Snoot

# Results

## Task parameters

Figures 1 and 2

The graphs show that EXPRESS Snoot resulted in reduced handling time and reduced vertical displacement of the box, where parcel handling time is the duration between grabbing and releasing the parcel.

## Energy Consumption

Figures 1, 2, and 3

The graphs show the total energy consumption during the task, mean and standard deviation. As you can see, energy consumption when using Caljan Performer with EXPRESS Snoot is significantly lower, due to reduced parcel handling time, and minimal parcel vertical displacement.

## Biomechanical outputs

Figures 8, 9 and 10

The graphs show the peak muscle activity during the lifting motion. Muscles are grouped according to their location within the body. The maximum value during the trial is extracted for each group.

For parcels with a low starting height, the most active muscle group is located in the lower back region. When parcels are located at a height above waist level, the peak muscle activity area is the neck and shoulder regions.

The most significant difference in the peak joint reaction force in the lower back region when unloading using Caljan Performer and Caljan Performer fitted with EXPRESS Snoot is in the lumbar shear force.

NIOSH recommends a maximum of 1,000 N for shear force. Although the average when using Caljan Performer was slightly lower, heavier parcels, placed higher than waist level in the trailer, showed a lumbar shear force in excess of 1,000 N.

## Conclusion

Caljan Performer with EXPRESS Snoot makes unloading loose-loaded packages easier for the user. The biomechanical outputs show that Caljan Performer with EXPRESS Snoot significantly reduces the effort required to unload loose-loaded parcels. The results show that this can be attributed to the fact that EXPRESS Snoot can be moved, so it is immediately alongside any given parcel.

In particular moving cargo from floor positions, and positions above waist level, requires less muscle activity. Peak muscle activity in the lower back (lumbar), shoulder and lower leg (shank) are significantly different when unloading with Caljan Performer and Caljan Performer with EXPRESS Snoot.

Although compression force in the lower back is similar when unloading with Caljan Performer and Caljan Performer with EXPRESS Snoot, the difference in shear force required is significantly higher with Caljan Performer. Shear force is the force required when turning whilst lifting.

Additionally, there is a clear implication on energy consumption. During our study, it took 2.8 seconds on average to unload a parcel using Caljan Performer. When Caljan Performer with EXPRESS Snoot was used, the average time to unload a parcel was 1.9 seconds.

We can conclude that when Caljan Performer with EXPRESS Snoot is used, unloading requires less effort and the user becomes less tired. This in turn makes the unloading process swifter.

These findings were important in improving workplace ergonomics, but since then we have taken another major step forward by developing Caljan ErgoRider — an integrated platform and conveyor belt solution designed to further optimize the loading and unloading process. Combining over 60 years of expertise in parcel handling with the insights gained from this scientific study, ErgoRider improves workplace ergonomics by allowing operators to stay within an ideal working posture throughout the task.

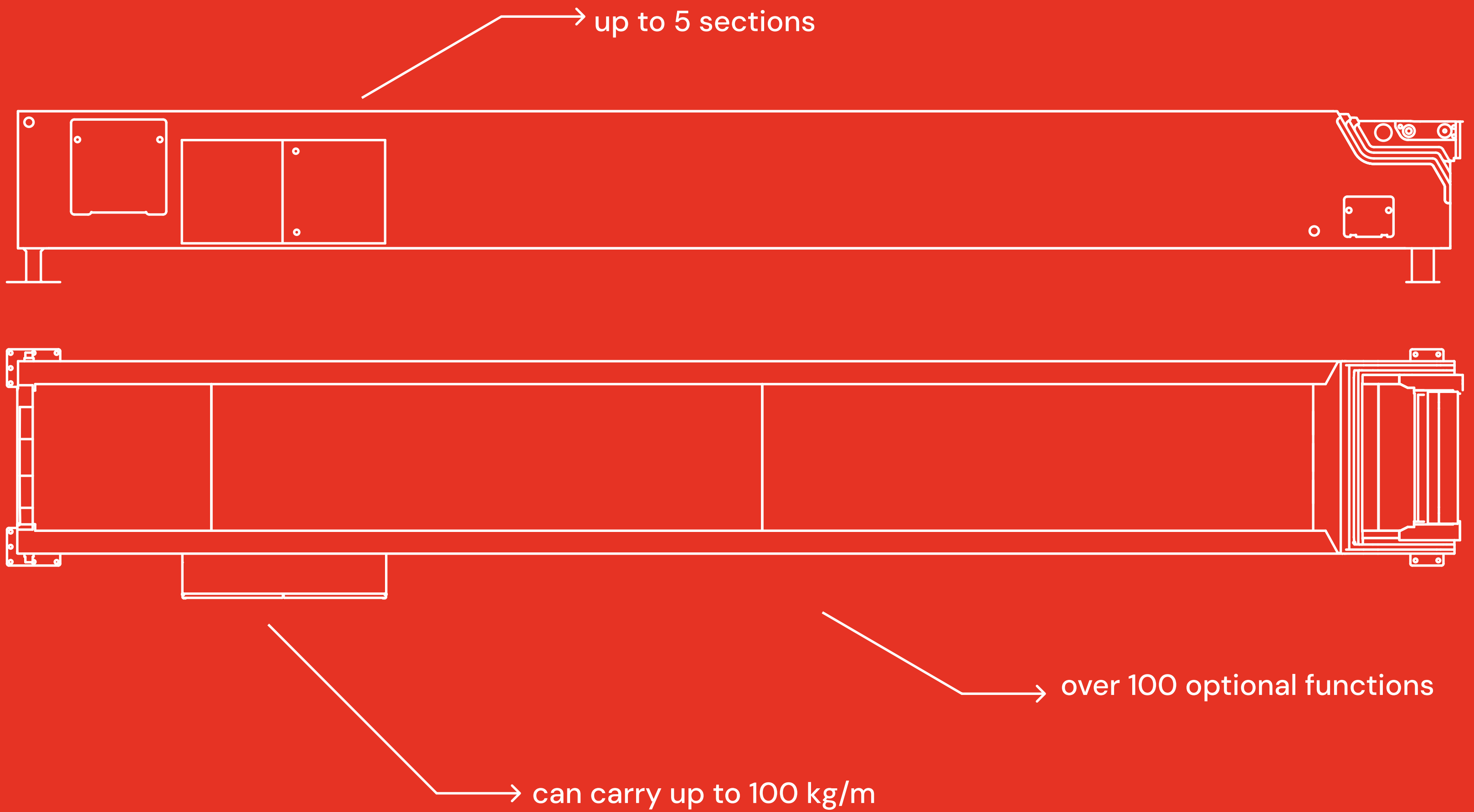
Although large-scale measurements on ErgoRider are still forthcoming, real-world application and customer feedback suggest even greater ergonomic benefits, including further reductions in strain, effort, and handling time. As workplace safety regulations evolve and the industry prioritizes operator well-being, solutions like ErgoRider will play a critical role in shaping the future of logistics automation.





Caljan Performer  
Telescopic Conveyor (CBP)





Developed and manufactured by Caljan, the Performer Telescopic Conveyor is designed to save cost and improve the work environment for employees loading/unloading loose-loaded cargo. This ergonomic aid allows one or two people to unload a container/trailer by simply moving each item onto the belt. The item is then transported along the conveyor into the facility. When loading the item travels along the conveyor to the operator, who picks it up from the belt and places it inside the container/trailer.

The Performer Telescopic Conveyor is a cantilevered construction; The base section, which is bolted to the floor, supports the extending sections. Only the base section has contact with the floor. This means the conveyor can be placed behind dock levellers and used to load/unload many different types of vehicles.

Using an intuitive operating panel, the user can extend the conveyor as they empty the container/trailer. Similarly, the conveyor can be retracted as the container/trailer fills up. Horizontal conveyor movement means the Performer is conveniently placed for the user throughout the unloading or loading process.

Performer can be used to move a multitude of items incl. cardboard boxes, sacks, flatpack furniture, carpet rolls and even totes.

## Specification

The Caljan Performer Telescopic Conveyors installed at PostNord have a base length of 7.5 m and an extension of 15.3 m, giving a total extended length of 22.8 m. The belt width is 600 mm and the belt moves at a speed of 0.5 m/s. The conveyor can carry a load of 50 kg/m. A conveyor carrying a load of 750 kg along its length is considered to be at maximum capacity.

Caljan Performer has a two-way anti-collision front bumper that ensures conveyor movement stops when an obstacle is detected. This prevents damage to both cargo and the conveyor. High-precision UHMW intrusion guards, fitted individually, reduce space between extending sections to less than 5 mm, protecting the user. Other gaps are shielded or guarded to prevent pinching. Full underguarding on all telescoping sections is an exclusive feature of Caljan Telescopic Conveyors, as is a 5-year structural warranty.

The conveyor naturally complies with machine directives 2006/42/EC, annexe II a and EMC directive 2014/30/EU.

## Features that enhance the work environment

Caljan Performer is designed specifically to improve the work environment, alleviating the strain of repeatedly moving items from one area to another. The unique design, with a gently rounded front section, ensures there are no sharp edges. Operator panels on both sides of the conveyor ensure that two people can work comfortably alongside one another.

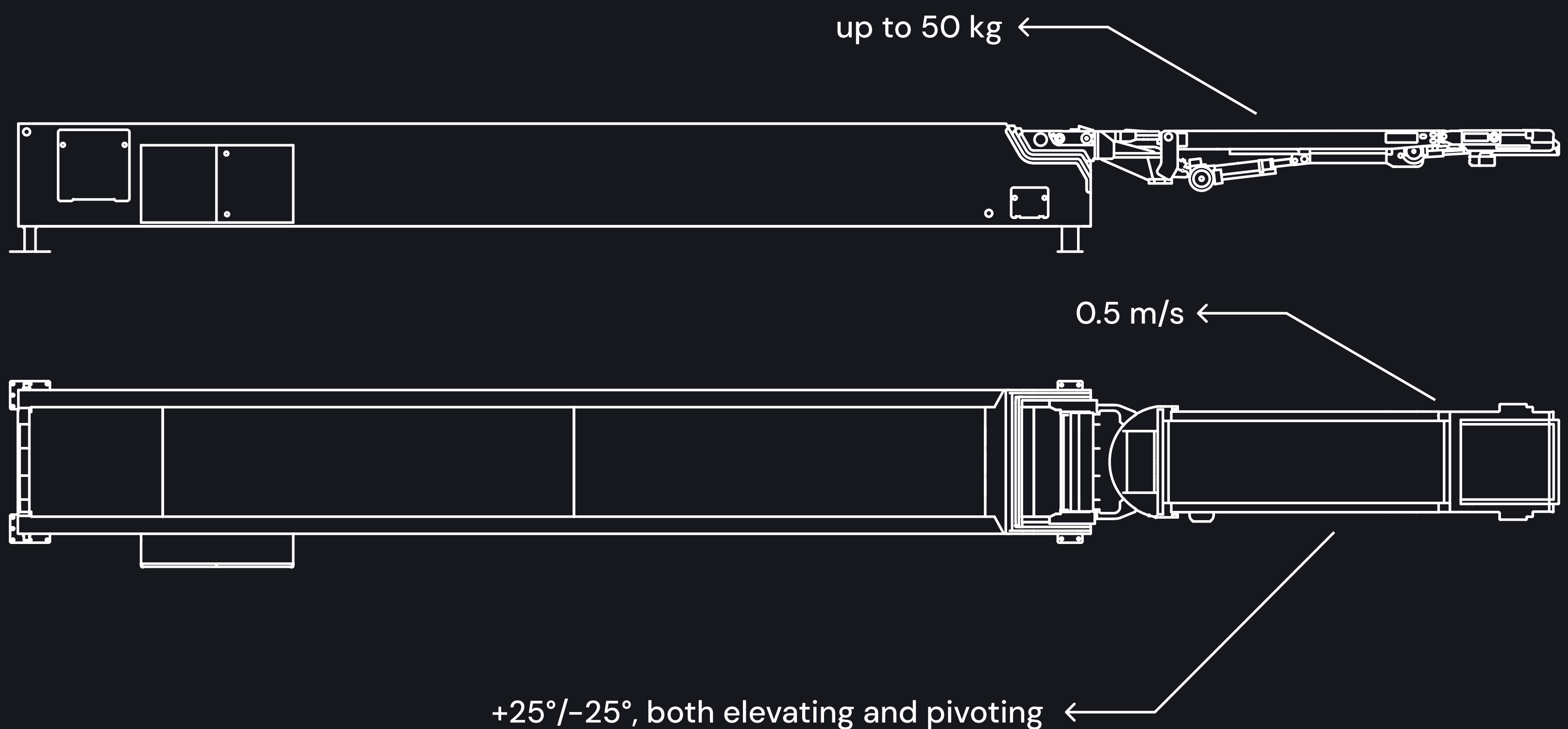
This mechanical aid has best-in-class lighting, with brilliant, non-blinding, light in the work area. Indirect and reflecting light beneath the extendible sections of the conveyor illuminates the whole floor of the container/trailer.





## Caljan Performer with EXPRESS Snoot (CBP.ES)





EXPRESS Snoot is an articulating conveyor, developed specifically to enhance the ergonomic functionality of Caljan Performer. Added as a final section to the extendible part of the conveyor, this optional Function is fully integrated with the Performer during production. Caljan Performer with EXPRESS Snoot is a single unit with all the benefits and features of a standard Performer — and much more.

## Specification

Moving between angles of  $+25^{\circ}/-25^{\circ}$ , both elevating and pivoting, EXPRESS Snoot can carry a load of 50 kg. The total length in a horizontal position is 3.38 m. The high-grip belt has a width of 600 mm and moves at a speed of 0.5 m/s.

The PostNord Caljan Performer with EXPRESS Snoot includes an optional Leveller.

The equipment is installed approx. 4 m from the door, as the EXPRESS Snoot with Leveller adds 2.5 m to the Performer's footprint when it is parked. Regardless of this position, the total extended length of the Performer with EXPRESS Snoot can easily reach to the very back of containers/trailers.

## Features that enhance the work environment

Pivoting up and down, and from right to left, EXPRESS Snoot optimizes the workflow when unloading containers/trailers. The unique Belt-2-Box concept means no time is wasted moving between the package and the belt, the user simply moves the conveyor closer to the area in which they are working. Lifting and stretching is reduced, as packages can be eased onto the conveyor belt with short, ergonomic movements.

EXPRESS Snoot can reach every inch of the trailer or truck with ease. Intuitive to operate, the articulating conveyor can be raised or lowered automatically by hitting robust nudge buttons. During the induction process, a user can work at a slow pace, moving the equipment manually. As the user becomes familiar with EXPRESS Snoot, a semi-automatic mode can be selected, so the focus is entirely on the cargo. An experienced user can move the conveyor automatically into all positions with little effort.

Adjusting position automatically, the Leveller that is included in the PostNord supply ensures that the user can place packages on a flat, horizontal surface.



## About Caljan

Caljan Telescopic Conveyors have been used universally since the 1970s as a mechanical aid when loading and unloading loose-loaded cargo such as parcels, packages and polybags. Continuous innovation has evolved and extended the program with alternatives and optional functions that further optimize the work environment. Today Caljan is recognized as the leading supplier of Telescopic Conveyors.

Caljan is the only manufacturer of Telescopic Belt Conveyors that offers two full ranges – [Classic](#) and [Performer](#).

Caljan Performer has been developed around a unique future-proof concept. Throughout its lifetime, it can be reconfigured with optional functions. This means the equipment can be adapted to match business requirements, as they change.

Caljan Performer fitted with EXPRESS Snoot offers a unique Box-2-Belt functionality that significantly improves the working environment.

In recent years, the product program for optimizing loading and unloading has been extended with the addition of automatic equipment. [AutoLoader](#) and [AutoUnloader](#) are available in selected regions and Caljan ErgoRider has been developed to further improve workplace ergonomics.

Caljan also develops and produces Automatic [Print & Apply](#) solutions. Carrier-specific labels are printed and applied at specific X, Y, and Z coordinates on each item. The newest addition to this program is the Flying Applicator. Packages, bubble envelopes and polybags are tracked. Once the random position on the belt is determined, the Flying Applicator swoops down to firmly apply the label. The whole process, from tracking to touchdown, takes just microseconds.

Systems for printing and inserting documents automatically into/onto or under packages as they flow along the conveyor line. Labels can also be applied so they form a pouch, with documents being automatically inserted.

The whole product range is supported by Aftermarket service with 24/7 emergency calls, planned or even residential maintenance plus refurbishment, upgrades, etc.

Caljan is a global company, owned by Investment AB Latour.





Henrik Olesen  
CEO Caljan

→ From manufacturer to consumer and back, almost every package dispatched today encounters Caljan at some point. Our mission is to create value for the logistics industry handling high volumes of loose-loaded cargo efficiently, through innovation, people and partnership.





# The best part.

[info@caljan.com](mailto:info@caljan.com)

Caljan A/S, Ved Milepælen  
6-8, 8361 Hasselager, Denmark  
T: +45 8738 7800  
M: +45 3132 0035

[caljan.com](http://caljan.com)