



**LOADING
SYSTEMS**



DOCK EQUIPMENT & INDUSTRIAL DOORS

Dock equipment

Loading Systems

• **Loaders** are used to move material from one place to another. They are used in a variety of applications, including construction, agriculture, and material handling. Loaders are typically used to move material from a source (such as a pile of material) to a destination (such as a truck or a storage bin).

• **Conveyors** are used to move material from one place to another. They are used in a variety of applications, including construction, agriculture, and material handling. Conveyors are typically used to move material from a source (such as a pile of material) to a destination (such as a truck or a storage bin).

• **Cranes** are used to lift and move heavy loads. They are used in a variety of applications, including construction, agriculture, and material handling. Cranes are typically used to lift and move heavy loads from one place to another.

• **Excavators** are used to dig and move earth. They are used in a variety of applications, including construction, agriculture, and material handling. Excavators are typically used to dig and move earth from one place to another.

• **Compactors** are used to compact material. They are used in a variety of applications, including construction, agriculture, and material handling. Compactors are typically used to compact material from one place to another.

• **Graders** are used to grade material. They are used in a variety of applications, including construction, agriculture, and material handling. Graders are typically used to grade material from one place to another.

Dock equipment





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1. We take care.

Loading Systems delivers total solutions for loading and unloading with the emphasis on 'total'. As one of the European market leaders and pioneers in the field of loading and unloading, we manage the complete end to end process from consultancy, design, production, project supervision, installation and service. Our state-of-the-art R&D department, as well as our flexible regional manufacturing locations guarantee a market-orientated solution to cater for all your logistical needs.



Managing Directors Ronald and Harald van Wijk and the Loading Systems Management Team.



Pioneer in the field of loading and unloading

Safe and efficient

Loading Systems organises the layout of your loading and unloading bays to ensure maximum safety and efficiency. Whether it involves the design, installation, commissioning or maintenance: your requirements are the starting point for each element of our services. It goes without saying that our products and services comply with the European Machinery Directive Guidelines and include CE-marking. All Loading Systems companies are certified in accordance with the valid national and international quality marks, such as ISO 9001:2000, VCA, Investors in People, and HACCP.

Totally free to focus on your own business needs from the beginning to end

By involving us from the start of the planning process, the services we provide allow you to have your hands completely free so you can focus on your own

and the site arrangement is efficiently achieved during the construction stage, our state of the art design office will provide you with bespoke design details and construction drawings.

Dock equipment, industrial doors & accessories

Loading Systems offers a complete programme of products and services for your loading bays. To further complement your loading bay requirements, Loading Systems offers a wide range of supplementary accessories for you to choose from. Our Advanced Control Centre (ACC) even provides a practical web-based software programme to assist you in the efficient management of your loading bays. Advanced Control Centre increases your ability to efficiently and proactively coordinate, monitor and manage the activity of the vehicles and dock equipment around your loading bays.



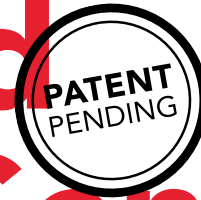
business needs. We can provide you with extensive and fully detailed advice based on: your type of organisation, the site's layout, frequency of loading and unloading, your type of vehicle fleet, your type of internal material handling equipment and the type of goods being moved around the site. Furthermore, we realise the importance of getting into the finer detail and can even advise you on the correct aesthetical design of the loading and unloading bay openings. To ensure a seamless interface between our products

Always available

With Loading Systems offices located throughout Europe, we are always close by. We are ready and available 24 hours per day, 7 days per week. Our expertly trained engineers ensure reliable maintenance, certification, repairs and replacement of your loading bay equipment whenever you call.

**No matter where you are, or what your loading bay requirements are,
We take care.**

2. Advanced Control Centre



With the Loading Systems Advanced Control you can efficiently and pro-actively coordinate, monitor, control and manage vehicle traffic around your loading bays. The system is based on Dock Management, Facility Management, Service and Statistics & Reporting modules.



Your loading and unloading systems, monitored 24/7

2.1 Dock Management

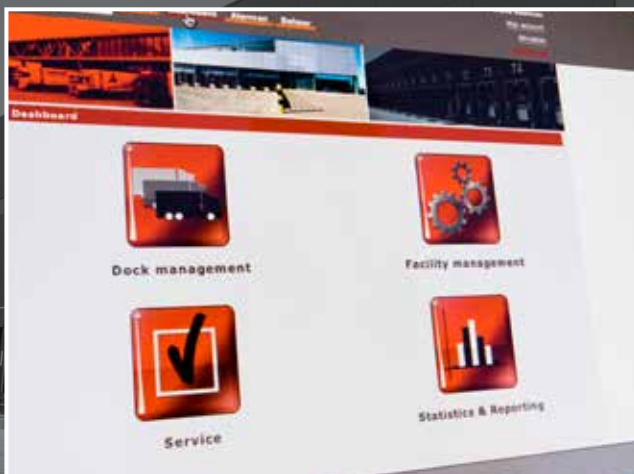
The Advanced Control Centre Dock Management module offers live information on the status of all your loading and unloading dock stations. Vehicles can be allocated to a loading bay by making a real-time reservation at the loading and unloading dock from a remote location. As soon as the vehicle docks at a loading and unloading bay, you immediately see what is happening on the screen. The live status of the loading bay equipment at the loading and unloading bay is also made continuously visible, including information on whether the dock door is open or closed, or whether a dock leveller is or is not in use. As soon as the vehicle departs on completion of the loading or unloading operation, the loading dock is automatically released for the next vehicle reservation. This eliminates unnecessary waiting time for the next vehicle to be loaded or unloaded and always guarantees that the correct vehicle is allocated to the correct loading bay.

2.2 Facility Management

The Advanced Control Centre Facility Management module provides a real time status overview of all your loading and unloading bays at a glance. For instance, you can quickly establish which doors are open or closed. With authorisations in place, you can operate the doors by remote control. The system allows you to receive an e-mail or text message if the opening time of a door exceeds a preset time. There is also a surveillance walk-around feature for checking loading bay lights which are left on, with an option to switch them off from a remote location.

Energy-saving and safety

Each time a door is unnecessarily opened expensive utilities energy is lost. The Advanced Control Centre prevents unnecessary energy losses by improving the management of the vehicle fleet and the loading/unloading process. Doors can be controlled so that they can only be opened during the loading and unloading



Dock Management - Advantages

- Full control and a summary of the vehicles near the loading and unloading bay.
- Improved efficiency and occupancy rate of your loading and unloading bay.
- Reduced risk of errors: allocation of vehicles to the correct loading and unloading bay.
- Reduced waiting times for vehicles and improved yard management.
- Current summary of the occupancy rate, average loading and unloading times, number of vehicles loaded/unloaded per loading bay, and a complete overview of the loading and unloading bay status.

process and the doors can immediately be closed after the loading/unloading cycle is complete.

Facility Management - Advantages

- Improved security of your building.
- Live summary status of the loading and unloading bays (i.e. door open / closed).
- Possibility to link to your WMS system (correct goods at the correct loading bay).
- Environmentally-friendly; less energy loss and reduced CO2 emission.
- Less absence through illness due to less draught and an improved working environment.

2.3 Service

With the Advanced Control Centre Service module, your loading and unloading bay equipment is monitored 24/7. The Advanced Control Centre informs a Loading System specialist on any loading and unloading bay equipment breakdowns. Problems can immediately be analysed and solved, at times often remotely, which significantly reduces operational disruption to your loading and unloading activities.

Maintenance

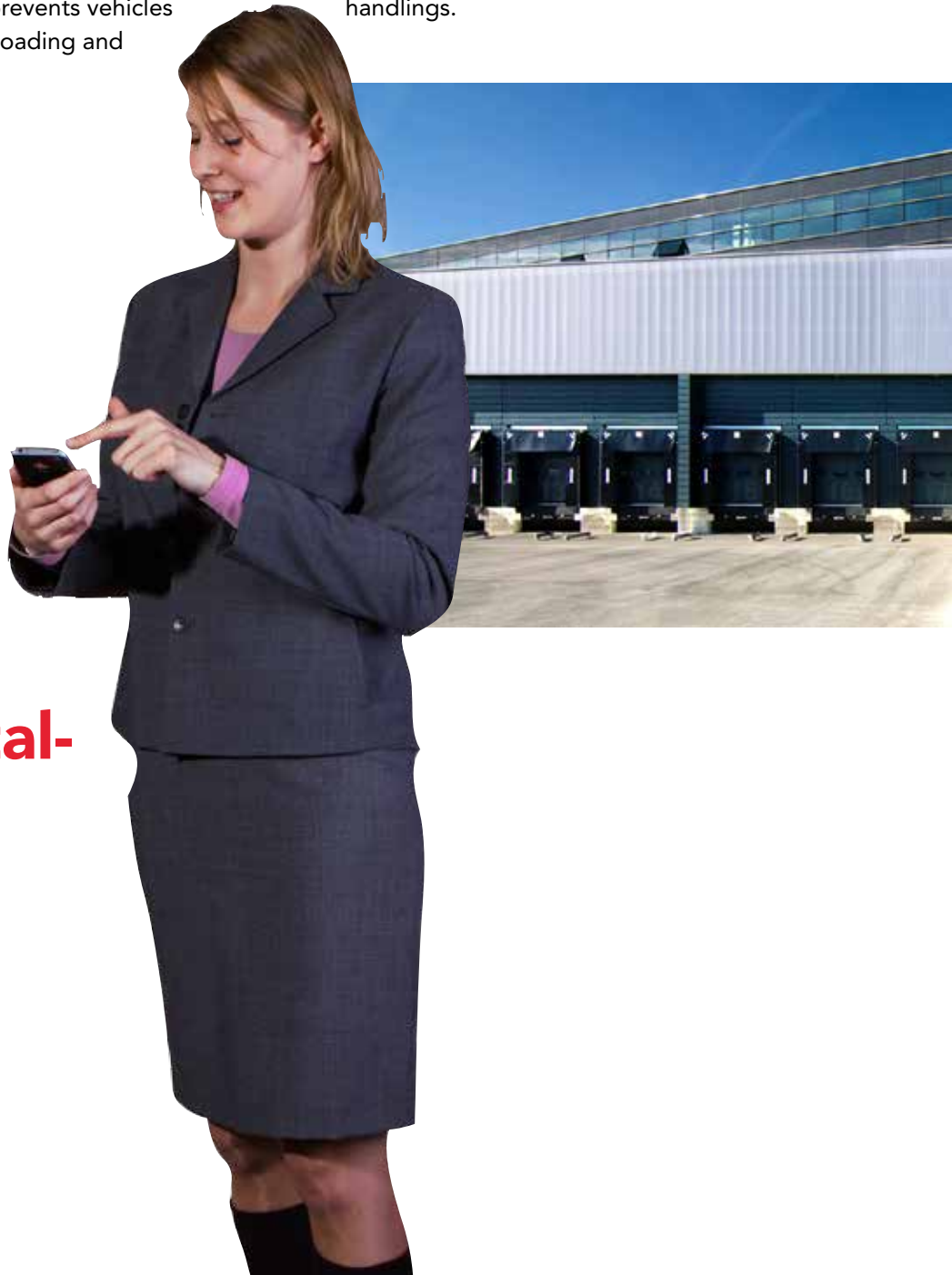
Periodic maintenance guarantees maximum optimisation of your loading and unloading bay equipment. Based on measured usage, periodic maintenance can be automatically planned by the Advanced Control Centre Service module. Naturally, any error or periodic maintenance requirements are visible in the Dock Management module. This module also ensures optimal operational management and prevents vehicles from being directed to unavailable loading and unloading bays.

All these features guarantee maximum operational uptime. By ensuring your equipment is maintained at the correct service intervals and by reacting to breakdowns immediately at the time when they occur, you achieve optimal efficiency by avoiding unnecessary waiting time during the loading and unloading activity.

Service module - Advantages

- Maximum uptime of your loading and unloading bay equipment: 24/7 product monitoring.
- Error codes sent automatically using modem technology, and these can often be solved remotely. Our engineers are informed even before you have detected the problem yourself.
- Service and maintenance will be executed at the correct service intervals, ensuring extended product lifetime, and reduced lifetime maintenance costs.
- Minimal operational costs and less administrative handlings.

**Efficient,
environmental-
friendly and
safe**



2.4 Statistics & Reporting

The Advanced Control Centre Statistics & Reporting module allows you to optimise transport and flow of goods. With the Statistics & Reporting module you have the possibility to retrieve loading bay equipment usage rates, exact and average loading and unloading times, and the number of movements per loading and unloading bay. Data can be used effectively and efficiently to monitor and control your loading and unloading activity to optimise efficiency.

Statistics & Reporting - Advantages

- Optimal summary of the loading and unloading bay operational costs.
- Substantiated analysis to optimise vehicle traffic and flow of goods.

2.5 Minimum investment

The Advanced Control Centre is an easily accessible solution and is fully web-based. It only requires minimal (hardware) investments. The Advanced Control Centre is accessible from any PC with an internet connection, and allows multiple authorised users to use the system simultaneously.

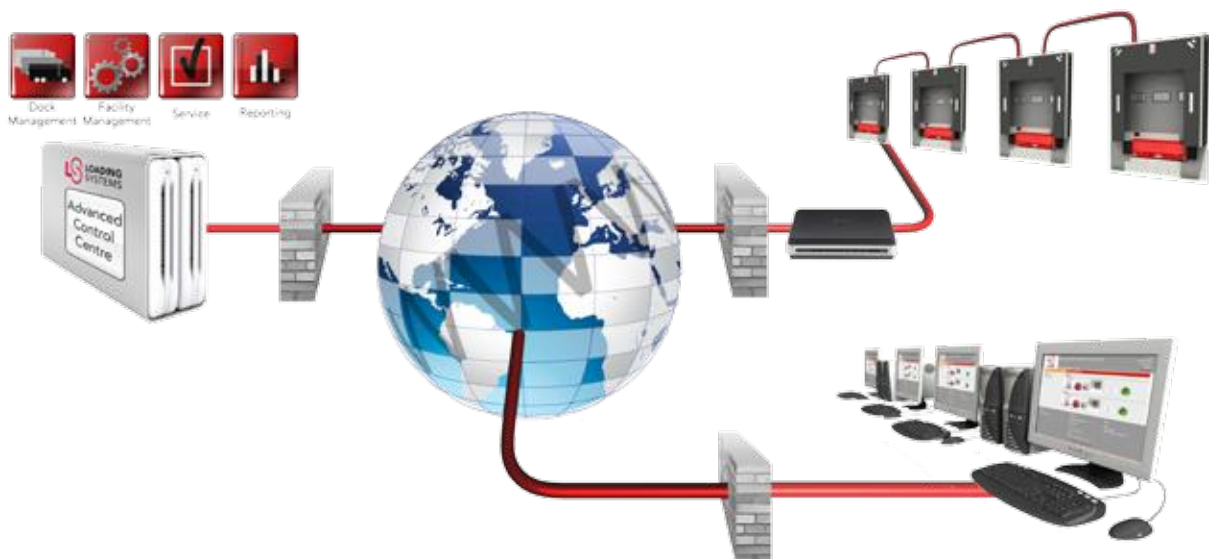
The Advanced Control Centre serves your purpose!

- Easily accessible web-based solution, minimum hardware investment.
- Accessible from multiple PC's by multiple users simultaneously.
- Automatic software updates: you always have the latest software release available.

The Advanced Control Centre allows you to manage your loading and unloading bays in a cost effective, environmental-friendly and safe way. Loading Systems ensures maximum uptime and optimization of your loading and unloading bay equipment.

We take care.

Accessible solution and fully web-based



3. Dock design

Loading Systems is eager to prove its reputation as a total solutions provider and specialist, which is why we prefer to be involved at the earliest stage of the planning of your new building or renovation of your existing site. The design phase is the most critical stage of the planning process for ensuring optimal usage and efficiency is achieved throughout the facilities lifetime. You can rely on our knowledge and expertise to assist you in the decision making process to achieve optimal design layout of the loading bays, and best selection of the right products for your operational needs.



Know-how, quality and expertise under one roof

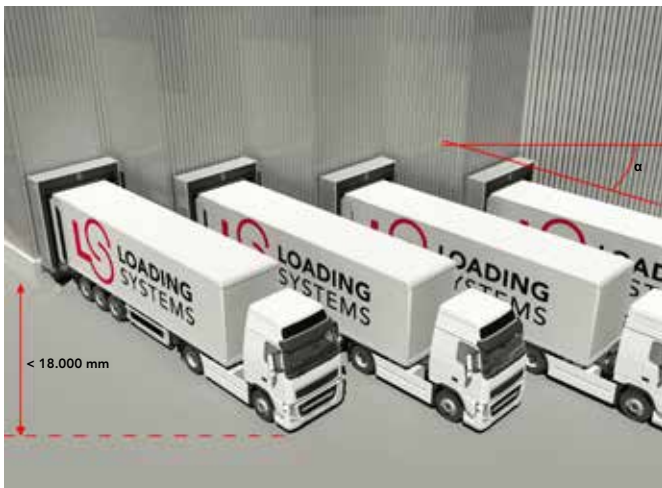
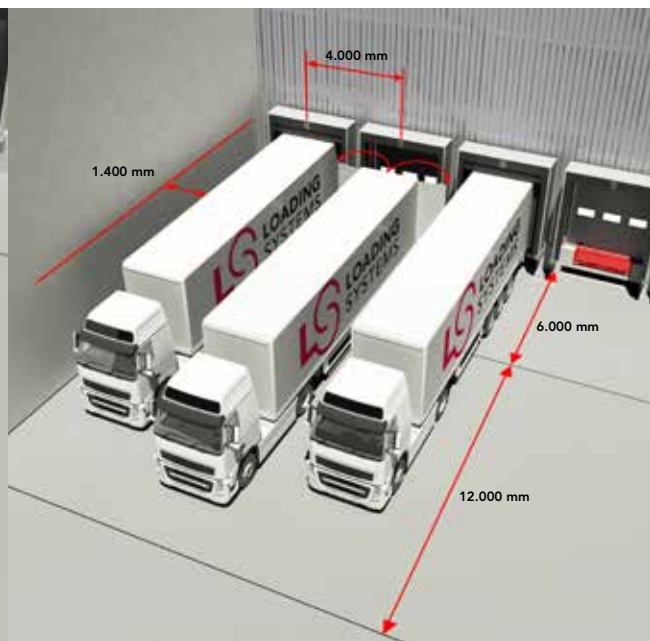
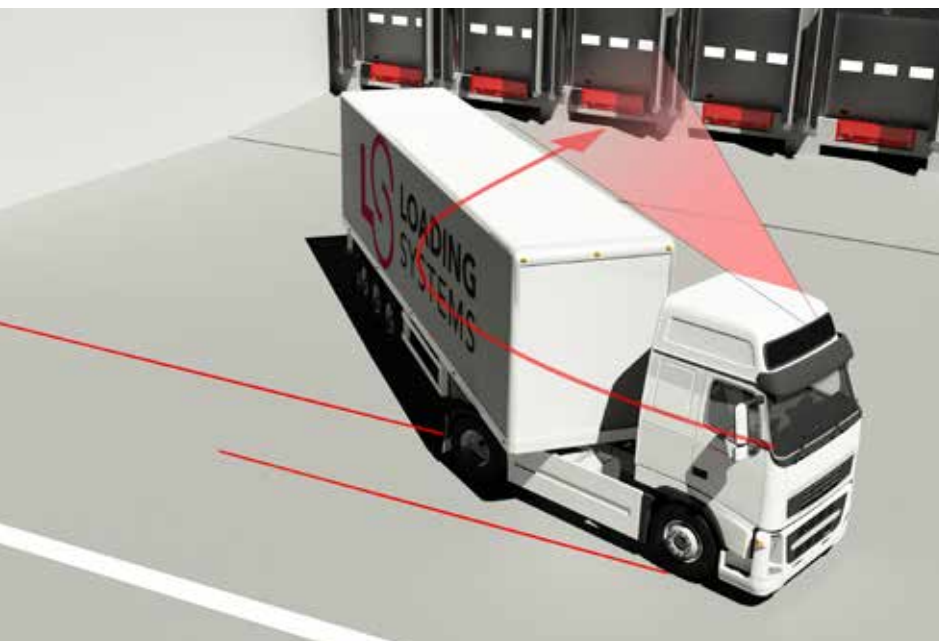
User-friendliness is largely determined during the design phase

3.1 Site layout

The directions of approaching vehicles as well as the required turning circle space are both important factors when planning the site lay-out. Another important factor to consider is the centre distance between each adjacent loading bay to ensure adequate space is available to open the vehicle doors. It is also important

that the vehicle drivers have a clear view in their mirrors during the vehicle docking process.

In situations where insufficient yard space is an issue, loading bays can be arranged on a saw tooth arrangement, or an indoor platform or a rising loading platform could be an option.



3.2 Loading and unloading platform drainage

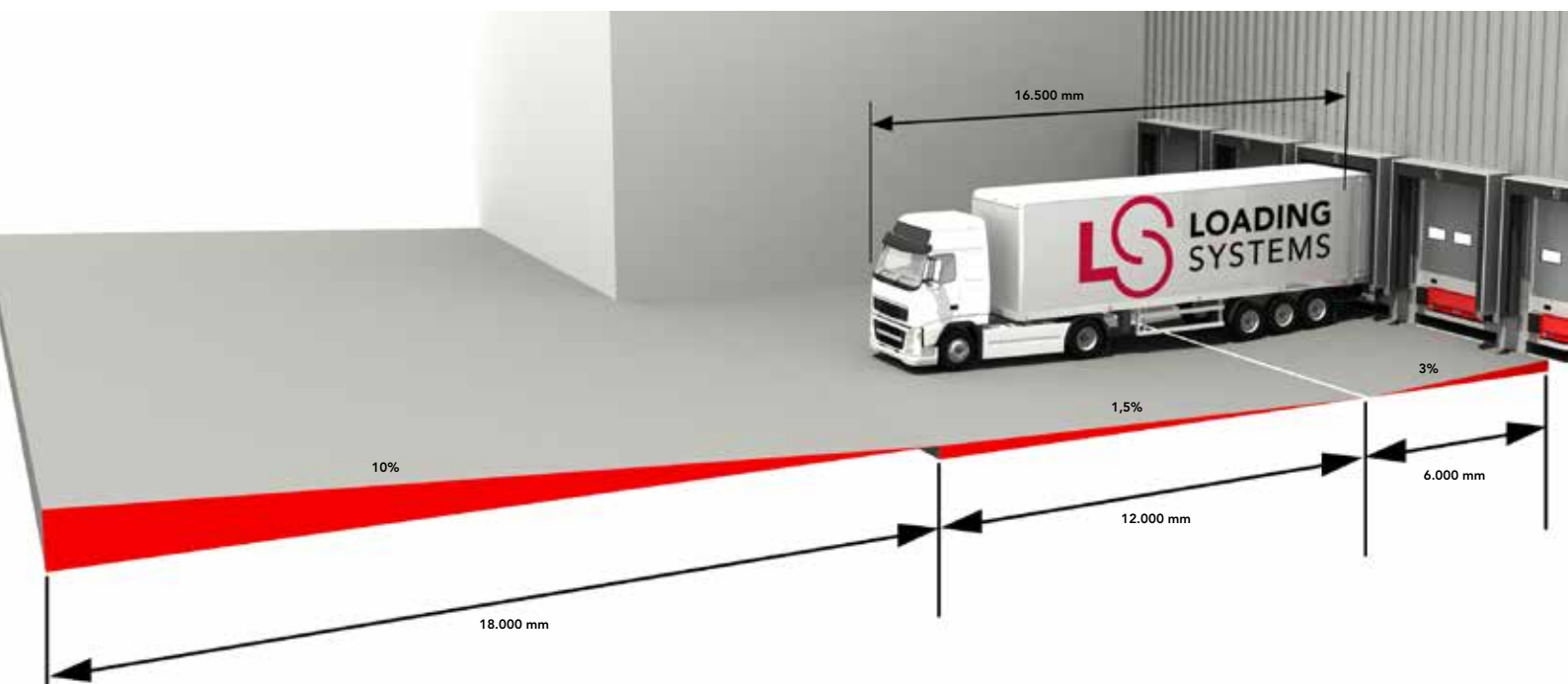
When designing the yard immediately in front of the loading bay it is important to construct the yard drainage so that surface water runs away from the building. The gradient of the yard should always be constructed to ensure that docked vehicles are as near as possible to the horizontal plane. This will ensure that any surface water on the roof of the trailer will run from the top of the vehicle top and not fall onto warehouse operatives or any goods positioned in the door opening. When yard gradients are constructed correctly, it prevents damage to the dock doors, the surrounding walls of the building and any premature damage to the dock bumpers.

3.3 Platform height & tailgate opening

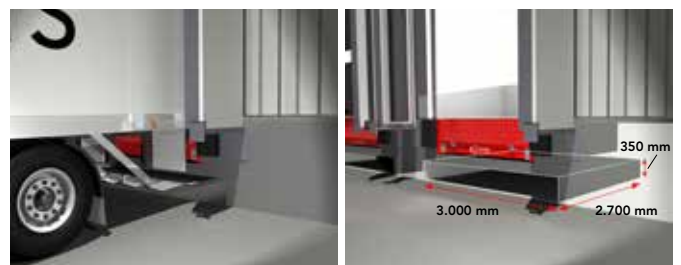
The dock height is determined by the vehicle bed ride heights of most common vehicles. There might be exceptions when loaded and/or unloaded is by non standard methods.

Vehicle bed heights:

International transport (trailers):	1100 - 1400 mm
Distribution vehicles and trailers:	1000 - 1200 mm
Containers and removable containers:	1200 - 1600 mm
Refrigerator trucks:	1300 - 1500 mm
Volume transport:	600 - 1000 mm



When vehicles using a loading bay are equipped with a hydraulic tailgate at the rear, we recommend that the face of the loading bay is created with a tailgate opening below the dock leveller. When docking the vehicle, the tailgate lip is then positioned safely into the tailgate opening and prevents any damage to the vehicle or dock face.



3.4 Dock leveller - dimensions & load capacity

The dock leveller length is determined by the maximum permissible working gradients for the internal transport vehicle and the goods to be loaded/unloaded.

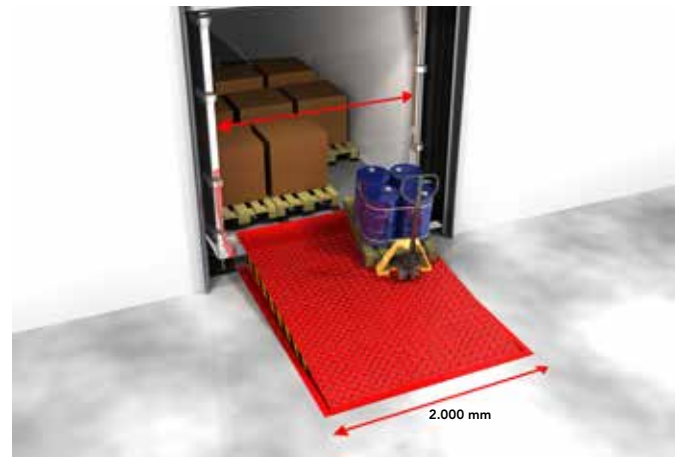
Admissible slope angle (α):

Hand pallet:	max. 5.0 %
Electrical transpallet:	max. 7.0 %
Electrical fork-lift truck:	max. 10.0 %
Diesel or gas fork-lift truck:	max. 12 %

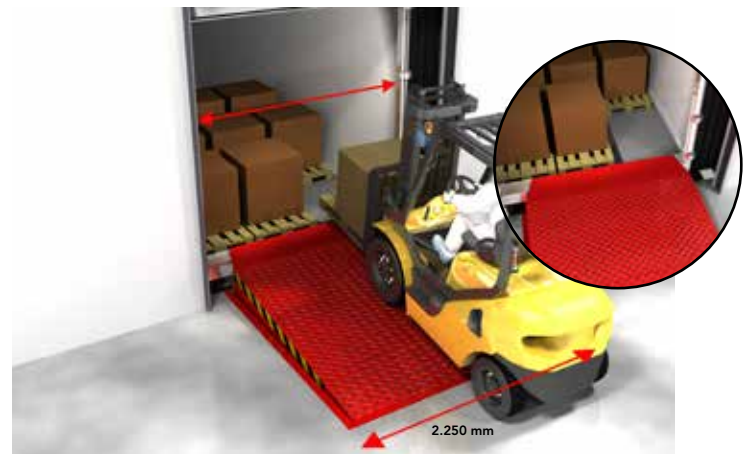


A proper design prevents damages and ensures functionality

The dock leveller width depends on the vehicle clear width and the goods to be loaded / unloaded.



When electrically powered or hand operated pallet trucks are used or when loading and unloading the last load onto a vehicle below the warehouse level, then dock levellers with a width of 2250 mm are recommended.



The required dock leveller load capacity is based on the combined weight of the internal MHE equipment, the operator weight and the heaviest load, but should always be in accordance with EN 1398.

3.5 Dock shelter - type & specifications

The type of dock shelter, width, height and specification of the sealing material are based on the vehicle width and height, dock height and the sealing efficiency required.

4. Dock levellers

Loading Systems PoweRamp dock levellers offer you the possibility to bridge the difference in height and distance between the warehouse floor and vehicle in the most efficient way.



**Efficient and
safe loading
and unloading**

Loading Systems dock levellers ensure optimal bridging is achieved between the dock leveller and the vehicle bed. Even if the vehicle bed is not entirely horizontal due to uneven loading, the flexible platform construction will easily compensate the difference in height resulting from the platform not being horizontal.

Everything we do revolves around the needs of our customers

Loading Systems can provide bespoke solutions tailored to the customer's specific needs. No project is too large or too small as we provide solutions for: large distribution centres, small warehouses with a single loading bay, double-deck trailers or standard vehicles. We can advise and supply you with solutions for new build or refurbishment projects.

We have a solution for most loading bay applications. Our comprehensive product portfolio and range of options is designed to improve ease of use, safety, and integration with other products or systems typically associated with loading bay activity. Naturally our products and solutions are designed to be incorporated into the architectural aspects of the building.

We have more than 45 years experience of providing products and solutions to all market sectors including but not limited to: logistics, material handling, storage, food manufacturing, cold storage, transport, construction, industry and government.

Options

Our dock levellers are available as hydraulic, including extendable or telescopic lip, in a various range of dimensions, capacities, or built bespoke to your requirements. By selecting the options which best suit your needs you can achieve considerable capital savings but you also profit from lifetime cost savings through improved efficiency, high quality and reliability and the safety of your dock leveller.



The 233M with extendable lip can be extended or retracted by means of a separate control station. This operation ensures an ultimately accurate positioning of the dock leveller lip onto the vehicle bed. This ensures you prevent damaging the last load into the vehicle, also referred to as the end load.

The standard load capacities are 60kN or 100kN. However, most load capacity requirements are possible. During the loading or unloading process the vehicle's upward and downward movement, or float, is automatically followed.



The Loading Systems dock levellers are also suited to load or unload so called end loads below warehouse level.



The working range or lip angle can be adjusted to suit specific requirements.

Dock levellers can be delivered in most colours or hot-galvanised.

4. Dock levellers

Durability

The robust construction and self-bearing characteristics facilitate open or closed pit styles or even tailgate openings.

The modular front beam on the lower frame serves to protect the hydraulic and mechanical construction at the bottom of the dock leveller.

The Loading Systems dock levellers include a fully closed hydraulic system.



Safety

The loading bay opening is typically an extremely active egress and ingress logistical opening, so good route planning is essential to manage safety. Loading Systems can increase safety on and around your loading bay openings and can offer you an extensive range of products and accessories.

Low operating hydraulic pressure

The use of one single chrome hardened main cylinder with double sealing ensures that the hydraulic system has an extreme low operating pressure. This reduces failures and increases durability.

Emergency stop facility

Loading Systems has a unique emergency stop safety device integrated into the main cylinder which, unlike most hose rupture valve devices, is not temperature sensitive or susceptible to failure.



Emergency switch

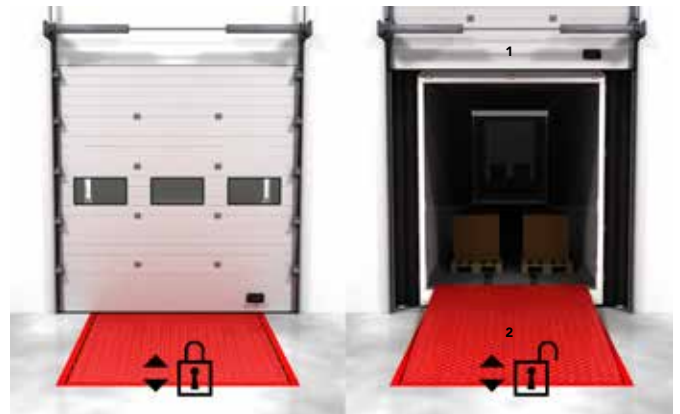
The control box can be provided with an emergency stop switch with reset protection (panic stop) as an option.

Anti-skid coating

The platform is provided with tear plate as a standard. As an option the platform can also include an anti-skid coating which also has sound-absorbing properties.

Leveller and door protection

With manual or electrically operated doors, a dock leveller and door protection interlock can be fitted to the dock leveller. This means the dock leveller can only be operated if the door is opened.



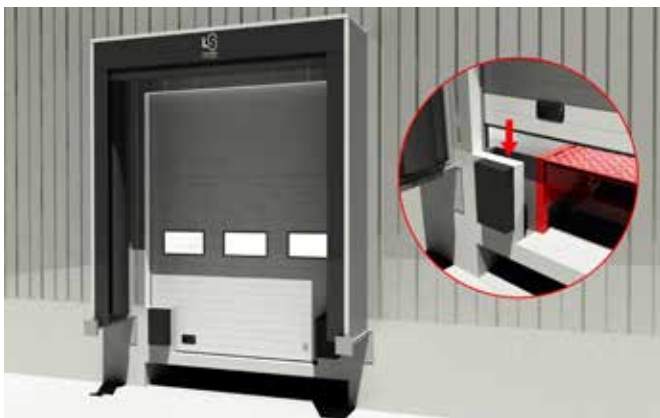
Energy-saving & sound insulation

The Loading Systems products are typically located at the interface between the internal and external environments. We are often presented with the challenge of keeping the cold out and the warmth in, or visa versa.

Loading Systems offers a variety of solutions for these requirements. Our control boxes, which can be custom made, play an important part in providing the best solution. Please do not hesitate to ask for information on how we can accommodate the sequential logic of your operational needs into the control box, which can be programmed to suit your needs.

ISO Dock solutions

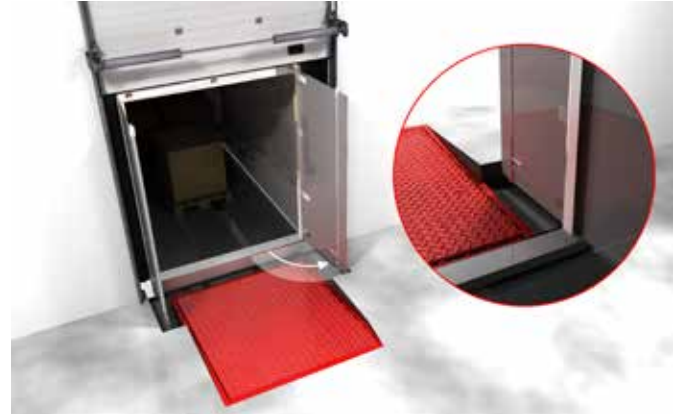
Our hydraulic dock levellers 233M with extendable lip of 1000 mm can be built-in into an ISO-dock layout. This solution allows the industrial door to close in front of the dock leveller, which ensures optimal insulation.



Our dock levellers comply with all safety requirements aspects in the European Directive

Stepped dock or dock house

For cold storage with refrigerator vehicles or fresh food processing environments where food contamination is a concern, it is important that vehicle doors are only opened after the vehicle is actually docked. We can offer a product solution for this requirement.



Durable draught sealing

Loading Systems has a durable solution to seal even the smallest of gaps between the pit edge and the dock leveller at the sides and at the rear.

Platform insulation

Dock leveller platform insulation not only improves insulation but also provides sound-absorption.

Silent Block

The dock leveller 232M with extendable lip can be provided with Silent Blocks as an option. This significantly reduces the impact sound made when the dock leveller reaches the lowest position.

Legislation

All Loading Systems dock levellers are provided with a CE marking and complies with all safety aspects stipulated in the European Directive EN 1398: 2009. Furthermore, the Loading Systems dock levellers are extensively tested in both real life and simulation software tests.

4. Dock levellers



4.1 232M dock leveller with extendable lip

The Loading Systems 232M is an electro-hydraulic dock leveller with an extendable lip. Both the platform and lip are hydraulically driven.

Dock leveller 232M - dimensions and working range

In compliance with EN 1398 it is not permitted to use dock levellers outside the permitted gradients of $\pm 12.5\%$ (approx. $\pm 7^\circ$).

Upon request, varying dimensional and working ranges can be provided to ensure the permissible tolerances are achieved.

Metric dimensions (mm)

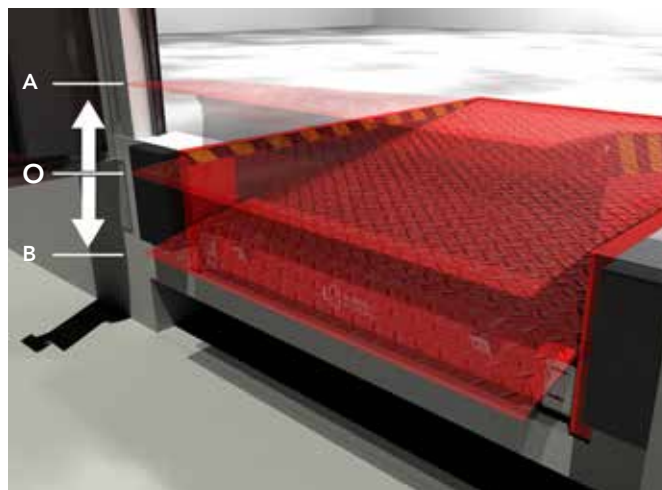
Length	Construction height	A	B
2000	600	415	290
2500	600	370	280
3000	600	355	275
3500	600	315	270
4000	600	295	265
4500	900	355	600
5000	900	347	600

Platform width: 2000 or 2250 mm

Imperial dimensions (mm)

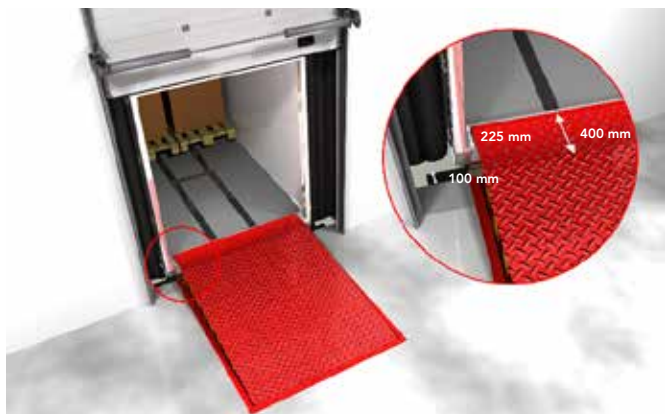
Length	Construction height	A	B
2170	600	400	285
2770	600	365	275
3370	600	325	270

Platform width: 1830 or 2100 mm



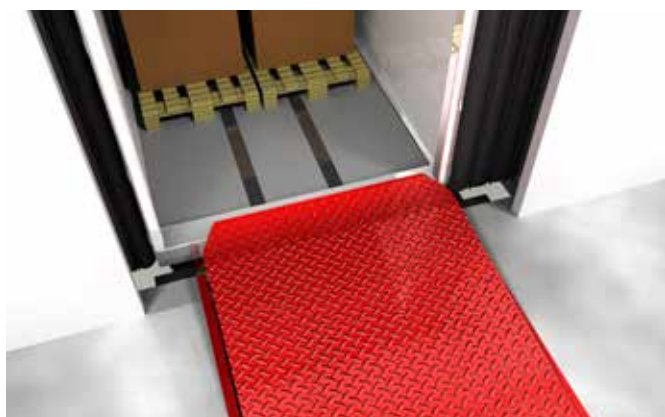
Lips

The lip has a standard length of 400 mm and - if 100 mm dock bumpers are used - a free loading surface of 225 mm depth on the vehicle bed can be achieved. As an option a lip length of 500 mm can be provided, and we can also adjust the lip angle to suit your specific applications.



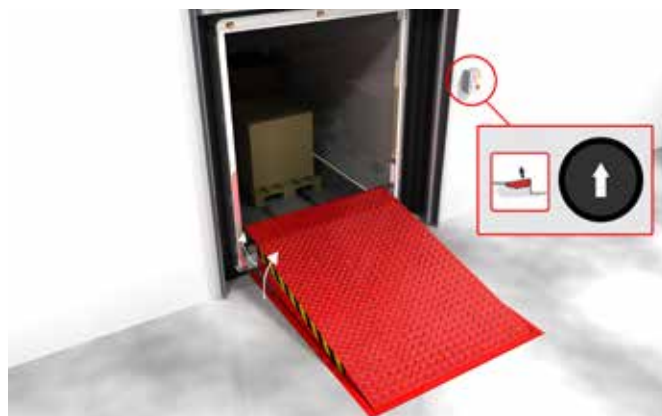
The orthotropic construction is extremely robust and also prevents pallet debris from hindering the hinged structure.

To increase the adaptability of the 232M, the lip can be supplied bevelled at the end or supplied with side sections.



Operation

The Loading Systems dock leveller 232M is operated by means of a single button. By keeping the button pressed, the platform will rise from its rested, or parked position and will extend the lip automatically when the platform reaches the highest position. If the button is subsequently released, the platform and lip will automatically lower to the vehicle bed level.



When used in conjunction with the "Auto-Return" button option, the Loading Systems dock leveller will automatically return to its home position as soon as the loading and unloading process is completed.

**Dimensions,
working range and
load capacity can
be adjusted upon
request**

4. Dock levellers

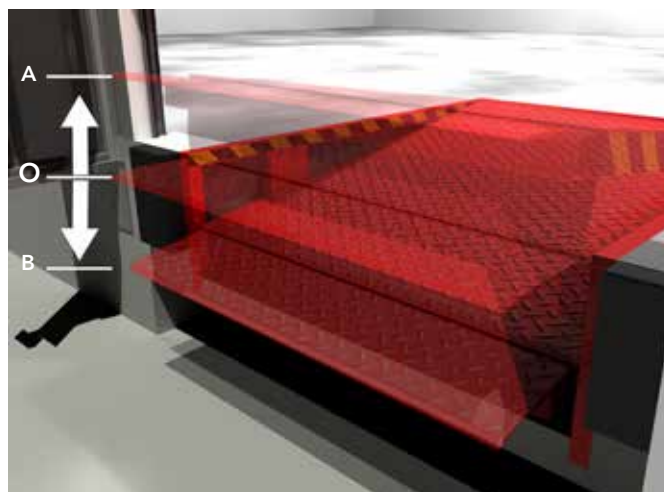
4.2 233M dock leveller with telescopic lip

The Loading Systems 233M is an electro-hydraulic dock leveller with a telescopic lip. The platform and lip are hydraulically driven.

Dock leveller 233M - dimensions and working range

Dimensions (mm)					
Length	Construction height	500 mm lip		1000 mm lip*	
		A	B	A	B
2000	700	500	450	-	-
2500	700	395	405	470	470
3000	700	415	380	490	430
3500	700	375	365	435	405
4000	700	350	350	400	385
4500	1000	400	640	450	700
5000	1000	400	640	450	700

Platform width: 2000 or 2250 mm
*) Optional



In compliance with EN 1398 it is not permitted to use dock levellers outside the permitted gradients of $\pm 12.5\%$ (approx. $\pm 7^\circ$).

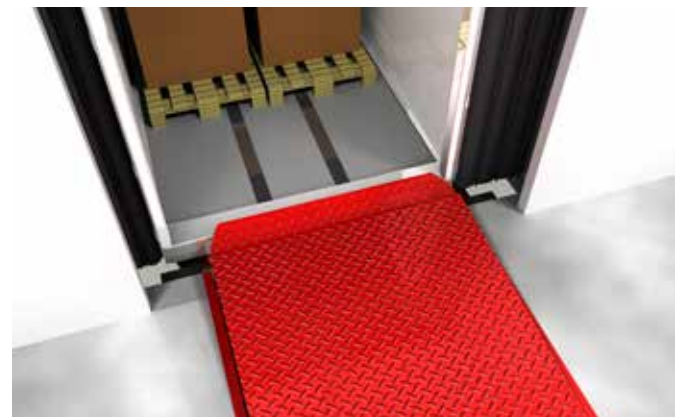
Upon request dimensions and working range can be adjusted to the permissible tolerances.

Telescopic lip

The standard continuous telescopic lip can slide from 0 mm up to 500 mm and has a free loading surface on the vehicle bed of 250 mm in depth. The board or lip can be extended to a length of 1000 mm and the lip angle can be adjusted for specific applications, as an option.



To increase the adaptability of the 233M dock leveller, the lip can be supplied bevelled at the end or supplied with retractable side sections. These smooth running side sections prevent damage to the rear of the docked vehicle.



Operation

The 233M dock leveller is provided with a 4-button control station as a standard.

Operation is extremely simple. By keeping the button "Up" pressed, the platform will rise from its home or parked position up to the required loading level.

The individual buttons "Lip-In" and "Lip-Out" are unique features. They allow operation of the lip when the platform is in any position. This provides extremely accurate positioning of the lip onto the vehicle bed.

If the buttons are released, the platform and lip will automatically lower to the vehicle bed level.

Activating the button "Auto-Return" (impulse) automatically returns the Loading Systems dock leveller to the home or parked position as soon as the loading and unloading process is completed.

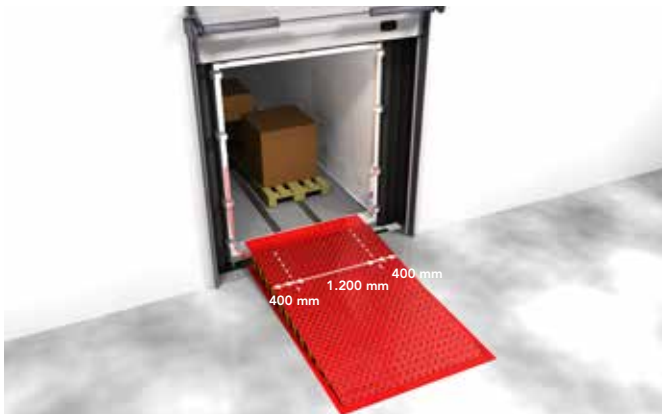
Simple operation with which the lip can be positioned in an ultimate accurate manner



4.3 253 dock leveller for vehicles and delivery vans

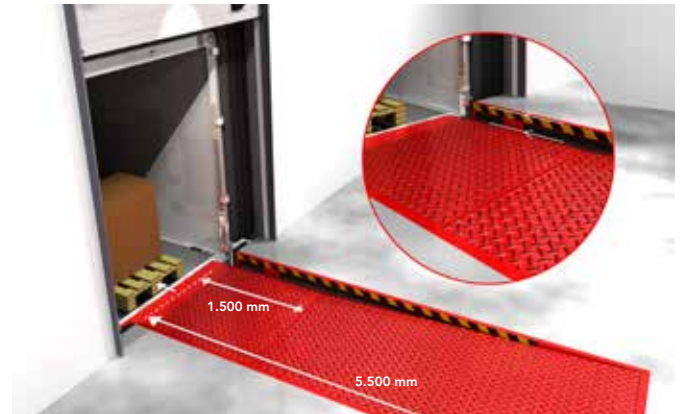
A single dock leveller solution which facilitates articulated vehicles and delivery vans? The PowerRamp 253 can accommodate both.

The dock leveller has a segmented lip or board. The dock leveller can be used as a "standard" dock leveller with telescopic lip for articulated vehicles. Or alternatively, when used for loading or unloading vans only the centre section of the lip or board slides out. Furthermore, the dock leveller load capacity can be adjusted to prevent overloading the delivery van.



4.4 256 parallel dock leveller for end load and high stacked goods

The parallel dock leveller ensures easy loading and unloading of end loads and high stacked goods. The dock leveller is provided with a parallel section at the front side, to enable the MHE vehicles to always enter the vehicle horizontally.



Special dock levellers for special applications

4.5 CombiControl

Loading Systems is a total solution supplier, and not only provides control systems for basic operation of individual products, but we also provide control systems for totally integrated operating systems. This means that Loading Systems delivers combined control boxes for dock levellers, inflatable dock shelters, dock shelters with electrically operated top curtains, and industrial doors and accessories.

Integrated solutions

From an aesthetic perspective, integrated solutions are more attractive than individual control boxes delivered by some suppliers. By combining the operation of your loading bay products into one single control station, only one power supply is required. You will not only save on installation costs but lifetime maintenance and repair costs can also be reduced.

Sequential logic

When using sequential logic, the Loading Systems products and accessories combined with the CombiControl control boxes can be programmed to suit your exact operating sequence as a standard feature.

Standard "Auto-Return" and possibility to include automatic sequential logic

All dock leveller control boxes can include an "Auto-Return" button, allowing the dock leveller to automatically return to its home position as soon as the loading and unloading process is completed.

The automatic sequential logic ensures that the CombiControl can be set so that upon activation of the "Auto-Return" button the industrial door, in conjunction with the door safety edge option, automatically closes as soon as the dock leveller returned to its home position.

Main power switch

All control boxes include a main power switch with padlock safety in accordance with EN 418 as a standard.

Advanced Control Centre

All controls have been prepared for the Advanced Control System. No error-sensitive and expensive control boxes are required to detect the product status when Loading Systems control boxes are used. All controls include LED indication to display the product status, and as an option can immediately report a failure.

Easy to install

By designing the controls so that only a limited amount of space is required, our controls can easily be installed in even the most space restricted environments.

Accessories

All control boxes can easily be adapted to accept most Loading Systems Accessories, and can easily and retrospectively be modified to be integrated in the sequential logic to improve safety on or around the loading dock to reduce damage and reduce energy consumption.

Docking Assistant

By means of "green and red" signals the Docking Assistant provides an indication of the distance between the rear of the vehicle and the loading and unloading bay. This system simplifies docking and reduces risk of vehicle damage.





Warning lights

It is possible to include traffic signal lights to work either independently or in conjunction with a warning light in the control station to improve safety on or around the loading bay.

As soon as the loading and unloading system is activated, the external stop light switches from green to red (unsafe to depart), and as soon as the dock leveller lip is positioned on the vehicle bed, the warning light on the control box inside, switches from red to green.

As soon as loading and unloading is completed, and the system returned to its home position, the external signal light switches from red to green and the warning light inside switches from green to red (unsafe to load and unload).

Vehicle detection sensor

The sequential logic in the control box can be set according to your preferred choices. The sequential logic, combined with the vehicle detection sensor, can ensure that the industrial door opens only after a vehicle is docked. This creates a safer loading or unloading situation on and around the loading and unloading bay: a fork-lift driver can no longer drive backwards onto the platform unexpectedly. Furthermore, this also significantly reduces energy loss, as the door only opens after the vehicle is 'sealed' onto the loading bay.

Alarm

The control box can be supplied with an acoustic alarm which is combined with a vehicle detection system. If the vehicle departs the loading and unloading bay prematurely, thus creating a dangerous situation, the acoustic warning signal will automatically be activated.

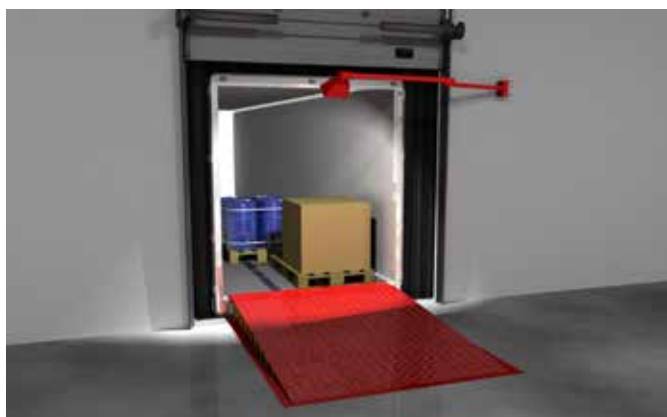
Wheel chocks

The wheel chock electric sensor detects the presence of a vehicle at the loading and unloading bay similar to the vehicle detection sensor. After the vehicle is detected, the sequential logic can be operated by means of the products (door or leveller).



Dock lights

Dock lights increase visibility around the loading and unloading bay. Dock lights can be programmed so that they illuminate the rear of the vehicle as soon as the dock leveller is activated.



Roll off safeguard fence

The roll off safeguard fence is positioned in front of the dock door to ensure that no one can accidentally fall onto the loading platform as soon as the door is opened.



Safe and CE-TUV certified

The control boxes comply with all relevant European standards and are CE-TUV certified. Quality and safety are in accordance with the valid standards.

A wide variety of accessories to improve safety on and near docks



4.6 Built-in possibilities and saving options

Loading Systems offers a large variety of built-in possibilities and architectural elements to meet all customer-specific preferences. We have a solution for

most applications, and we would be pleased to consult with you on the best options to suit your requirements. Good advice will result in significant savings on construction and lifetime cost.

Choose from a range of built-in options for all situations to ensure considerable savings on construction and lifetime costs

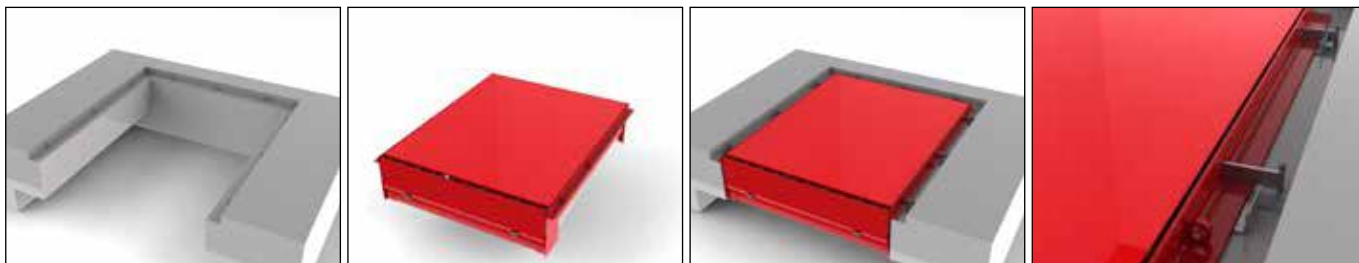
Self-bearing "hang in frame", integrated into the dock leveller (Pit box system 310)

Pit box model 310 is a fully "open" construction, whereby the dock leveller "hangs in" the pit box with the tailgate opening immediately below the dock leveller. The frame dimensions are maintained during construction by diagonal bracings which are already fixed

to the leveller during production. The dock leveller and frame are installed in the concrete recess by welding onto the existing reinforced concrete pin, which is then back filled with concrete.

Advantages:

- Very quick assembly.



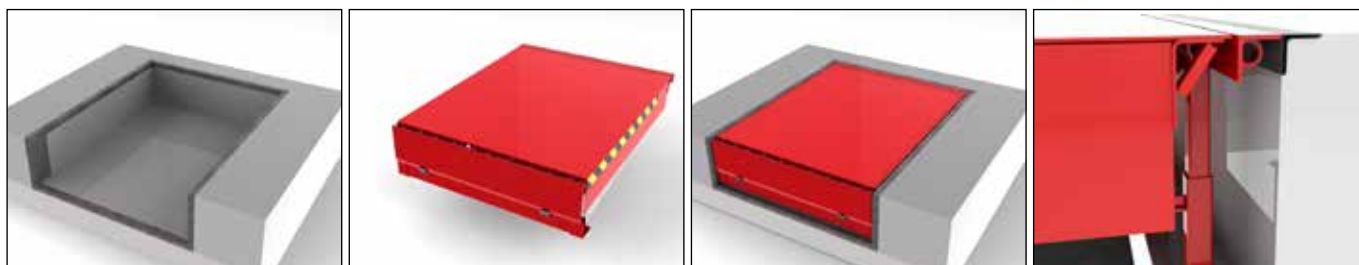
Pit box system 310

Pit box system with intermediate floor (Pit box system 320), console (Pit box system 330) or fully suspended (Pit box system 350)

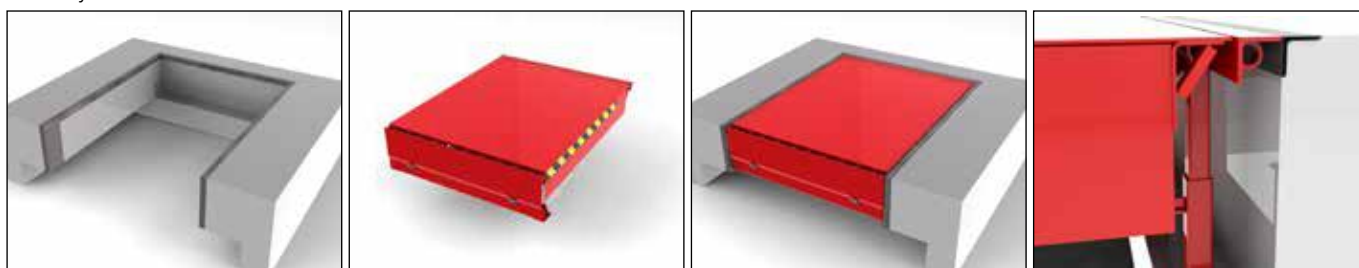
These pit box models are fully suspended and provided with a concrete intermediate floor or raised edge. For this pit box model, the frame is welded onto to the leveller during production.

Advantages:

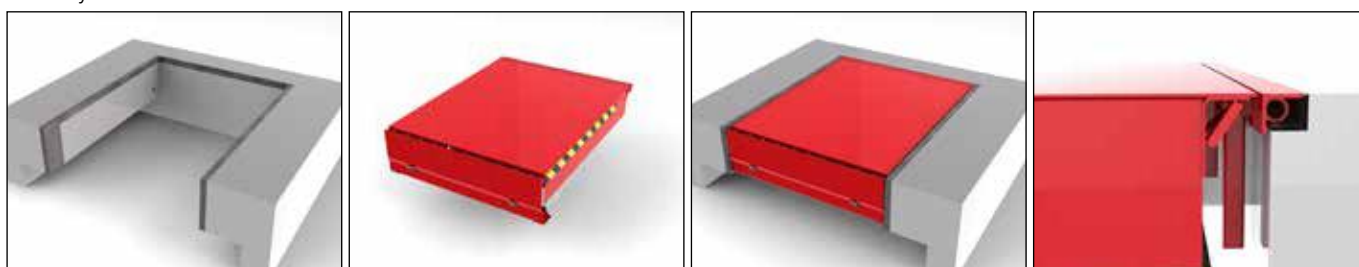
- The dock leveller is delivered in a lowered transport position, which could result in significant savings (approx. 50%) on transportation costs.
- Filling with concrete is not required.
- Very quick assembly.
- After assembly, the dock leveller is immediately ready for use.



Pit box system 320



Pit box system 330



Pit box system 350

4. Dock levellers

Box model with concrete form (Pit box system 340)

With pit box model 340, the dock leveller is provided with a concrete form during production. The dock leveller including concrete form is placed on a "temporary" or permanent wooden formwork or shuttering, after which the leveller and pit box are welded onto the reinforced concrete. The concrete is then poured

around the leveller and the permanent formwork is removed under the leveller.

Advantages:

- Very quick assembly.
- Low construction costs, no complex and expensive formwork.



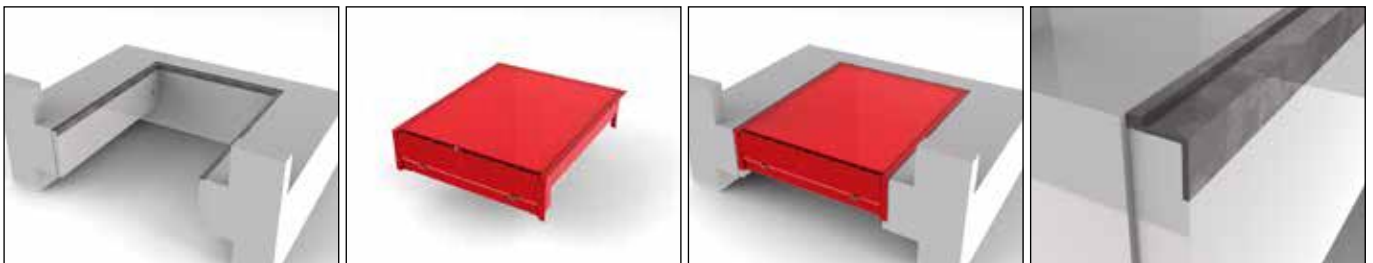
Pit box system 340

Self-bearing "hang-in frame", integrated into the dock leveller (Pit box system 360)

Pit box model 360 is a fully "open" construction, whereby the dock leveller "hangs in" the pit box with the tailgate opening positioned immediately below the dock leveller. The frame diagonal bracings are already fixed to the leveller during production. The dock leveller is welded on the pre-mounted frame in the concrete recess.

Advantages:

- Filling with concrete is not required.
- The pre-mounted frame can be fixed to the floor plate prior to mounting the dock leveller.
- Very quick assembly.
- After assembly, the dock leveller is immediately ready for use.



Pit box system 360

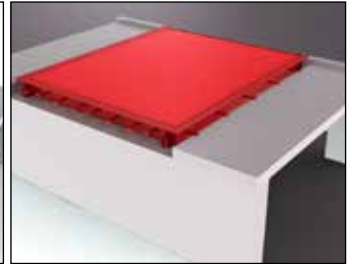
Self-bearing "hang-in" frame, integrated in the dock leveller, suited for building-in with prefab concrete systems (Pit box system 370 / 375 / 380)

These pit box systems are similar to the pit box system 360, however these also include anchors all around the frame. The front side of the frame is supported by a prefab concrete system. The frame is provided with adjustable screws in the back frame (pit box system

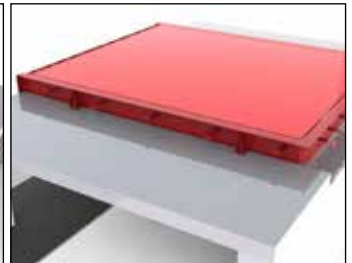
370) or around (pit box system 375/380), to ensure that it can be adjusted to the same level as the warehouse finished floor level.

Advantages:

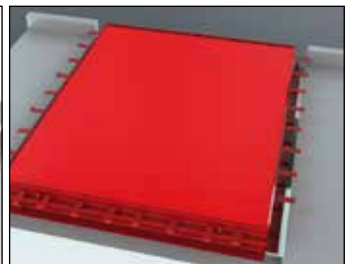
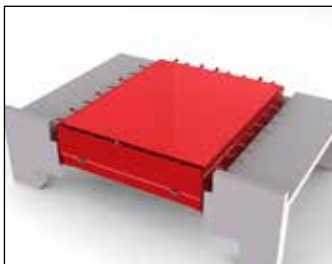
- Very quick assembly.
- Low construction costs, no complex and expensive formwork.



Pit box system 370



Pit box system 375



Pit box system 380

Low construction costs and extreme quick and simple assembly

5. Mini dock levellers & loading ramps

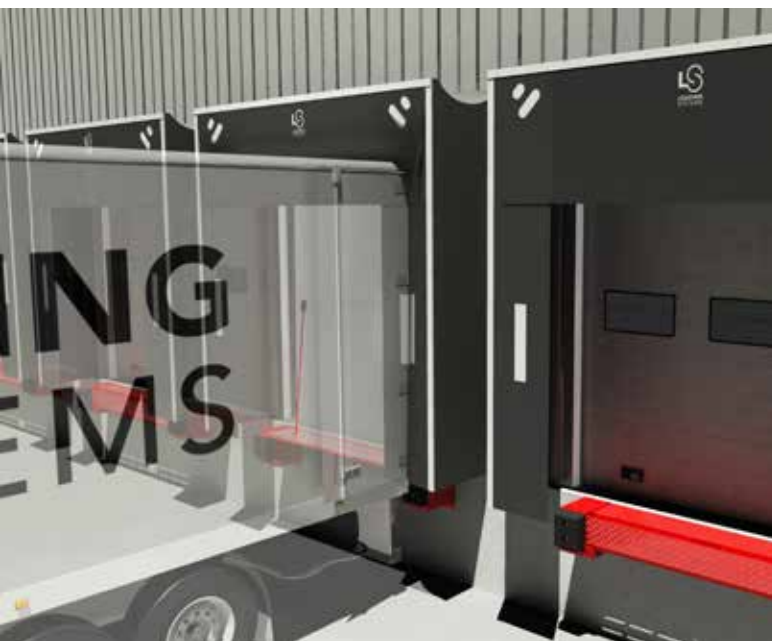
Loading Systems offers a complete programme of mini dock levellers and loading ramps for bridging small differences in height between the loading and unloading bay and the vehicle bed. The mini dock levellers and loading ramps can easily be installed in new buildings or into existing buildings.



For bridging minor differences in height

5.1 105 mechanical mini dock leveller with extendable lip

The Loading Systems 105 is a mechanical mini dock leveller with an extendable lip. The platform and lip are mechanically operated. The mini dock leveller 105 is mainly used in situations which do not facilitate a built-in traditional type of dock leveller, or in situations which have a minimum difference in height between the vehicle bed and the platform.



5.2 106 dock leveller - mechanical balance

The dock leveller Levelmaster 106 is mechanically balanced and is mainly used in situations which do not facilitate a built-in traditional type of dock leveller, or in situations which have a minimum difference in height between the vehicle bed and the platform.



Advantages:

- Compact product, minimum assembly time.
- Operated by one person.
- Automatically follows the vehicle's movements.
- Safe bridging of the difference in height between loading bay and vehicle bed.
- Automatic return to home position after the vehicle departs the platform.
- Safety: cannot be removed.
- Minimum maintenance requirements.

5.3 115 mobile loading platform

The mobile loading platform includes an aluminium anti-skid tear plate for the loading and unloading of vehicles with hand pallet trucks or roll containers MHE.

Advantages:

- Light-weight transport.
- Anti-skid surface.
- Low manual handling weight.
- Easy cleaning.
- Weather resistant.
- Safety against unwanted use.
- Limited investment.



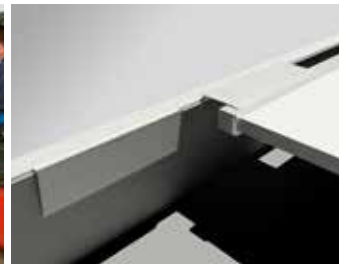
5.4 116 mobile container loading lip

The mobile aluminium and steel container loading lips are used when loading and unloading containers. This product is designed to be lifted by a forklift truck so it can be moved quickly and easily around the facility.



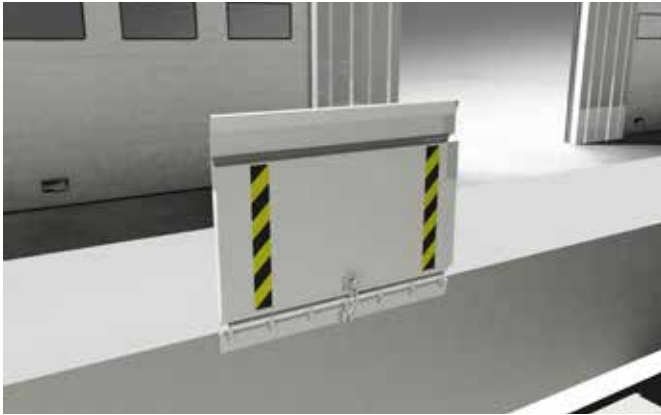
5.5 117 loading lip for train or goods waggons

Aluminium loading lips are specifically well-suited for loading and unloading trains or goods waggons. In its parked position the loading lip is in a vertical position on the platform. When loading and unloading the lip is raised or lowered from a guide rail fitted on the edge of the platform by using an integrated handle to position the lip on the goods waggon bed and when not needed returned back to the guide rail parked position.



5.6 125 aluminium loading lip

Aluminium loading lips are well suited for bridging small to medium differences in height. These lips can be operated by a single person, with no additional assistance required! The loading lips can slide sideways and are parked in a vertical position on the platform when not in use. An automatic lock retains the lip in a safe parked position, preventing any unintentional movement of the loading lip.



5.7 126 steel loading lip

Steel loading lips allow bridging over a greater degree of loading and unloading heights. With load capacities up to 6 tonnes, differences in height of up to 250 mm can be bridged. All models are available in either stationary or sliding versions. A maintenance-free spring system allows operation by one single person even on the higher load capacity models. An automatic lock retains the lip in a safe parked position when not in use, preventing any unintentional movement of the loading lip.



Easy single person operation

6. Lifting platforms

The Loading Systems PowerLift lifting platforms bridge large differences in height between street level and the vehicle bed or between the platform and vehicle bed.



The PowerLift is a hydraulic scissor lifting platform, based on a modular concept. The modular concept facilitates a wide range of heights and loading capacities. Because our products are made bespoke we can manufacture a products to suite your requirements. Durability, quality, safety, functionality and user-friendliness are the Loading Systems scissor lifting platform main characteristic features.

Easy bridging of large differences in height

Durability and maintenance

- High-quality steel ensures ultimate platform stability and robustness.
- The lower frame is vibration free and protected against external damage.
- The hydraulic power-pack is fully enclosed, offering protection even in the harshest of surrounding environments.
- The platform includes an inspection hatch for quick and easy maintenance.
- Maintenance-free roller bearings guarantee a longer life.

Quality and safety

- PowerLift lifting platforms comply with all EN 1570 safety requirements and CE-marking requirements.
- CNC processes ensure optimum precision and finish of manufactured components.
- PowerLift lifting platforms include a safety edge to all sides.
- The hydraulic system includes overpressure protection and a check valve, to guarantee that the hydraulic system will not be damaged due to overpressure.
- High-quality hydraulic cylinders include hose rupture protection. In the event of a hose rupture the lifting table locks in position.
- Support legs at all four corners provide the highest degree of stability when the platform is in the lowest position.

Functionality and user-friendliness

- Easy operation by means of a manually operated control station.
- The lifting height can easily be adjusted by a continuously regulated end stroke switch.

Customer specific solutions

- Bespoke options are available to meet most customer specifications and to increase the ease of use, safety, and facilitate integration with other products or systems related to the loading and unloading bay area. Naturally, these options also include solutions to adjust the system to the architectural aspects of the building.



6.1 Electro hydraulic lifting platform for loading and unloading goods



- Well-suited for bridging large differences in height
- Simple operation by means of a manual control stations provided with an optional key switch to prevent unintended use.
- Designed and manufactured to function optimally even in the most extreme environmental circumstances.
- The platform is provided with an anti-slip surface to provide optimum stability and robustness and is designed and manufactured to withstand high wheel point loads. This makes the lifting table well-suited to use with loaded pallet trucks or fork-lift trucks.

6.2 Electro hydraulic lifting platform with segmented horizontal exit ramp



- A segmented exit ramp can also be supplied in order to allow adjustment to different vehicle widths.
- The segmented exit ramp is designed and manufactured to withstand high wheel point loads, making the platform well suited to fork-lift truck or pallet truck traffic.
- The exit ramps can be fixed to either the short or long sides of the platform without jeopardising the stability of the lifting platform.
- The platform and exit ramp include an anti-slip tear plate to significantly reduce the risk of sliding.

6.3 Electro hydraulic lifting platform with barriers



- Operator safety is further enhanced by incorporating safety barriers into the platform.
- Operating stations can be installed on the platform to increase ease of operation whilst working on the platform.
- Built from high quality materials guarantees a longer life span and minimum maintenance.

6.4 Lifting platforms for double-decked trailers

Loading Systems delivers double-decked lifting platforms for vehicles with a double-deck bed.



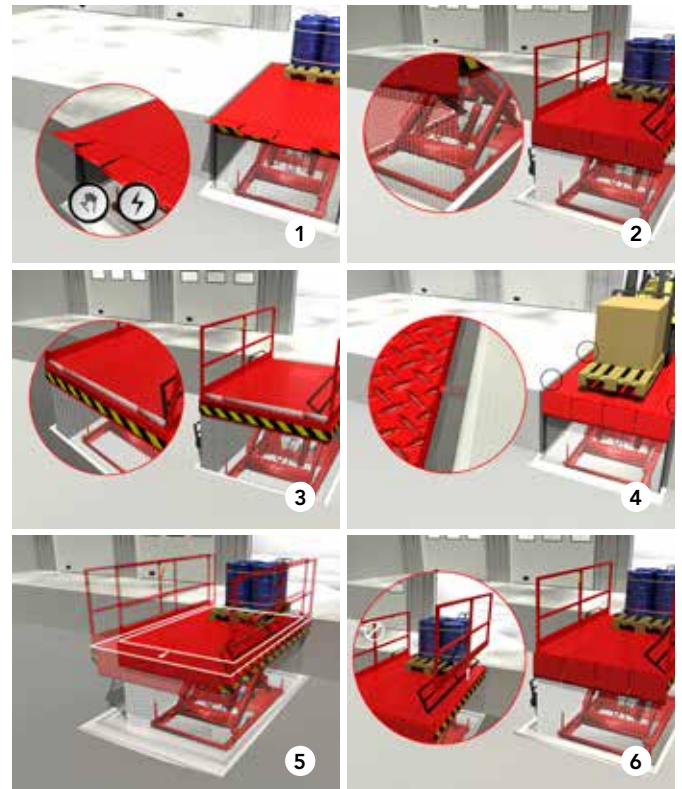
The standard programme can be extended with a variety of options and accessories

6.5 Options and accessories

The extensive Loading Systems PowerLift standard programme can be extended based on bespoke customer specific requirements with a variety of options and accessories.

Some options and accessories are:

1. Horizontal exit ramp supplied as either hydraulic or mechanical operation.
2. Hot-galvanised steel wire skirts to underside.
3. Anti Roll-off safety stop on the platform.
4. Platform lock in concrete.
5. Increased dimension of the platform upon request.
6. Removable barriers (insert).
7. RAL colour-selection.
8. Partial or fully hot-galvanised model.



7. Mobile dock leveller & fixed dock board

When there is no loading platform available, a mobile dock leveller is the ideal solution to bridge the difference in height between the vehicle bed and the yard.



Easy application if no loading platform is available

7.1 130 mobile dock leveller

The fork-lift truck can enter the vehicle by means of the mobile dock leveller. It is easy to change the position of the dock leveller by means of a fork-lift truck.

Often there is only a limited manoeuvring space available however, the mobile dock leveller centre axis allows easy relocation of the mobile dock leveller. A manually operated hydraulic or electro-hydraulic pump is used to raise the mobile dock leveller to the required height which can then be lowered onto the vehicle bed or container floor.

After locking by means of a quick-acting lock the centre axis is moved into a suspended or floating position. The centre axis has no bearing function during the loading or unloading process, which allows the mobile dock leveller to follow the upward and downward vehicle movements as the vehicle is loaded or unloaded.



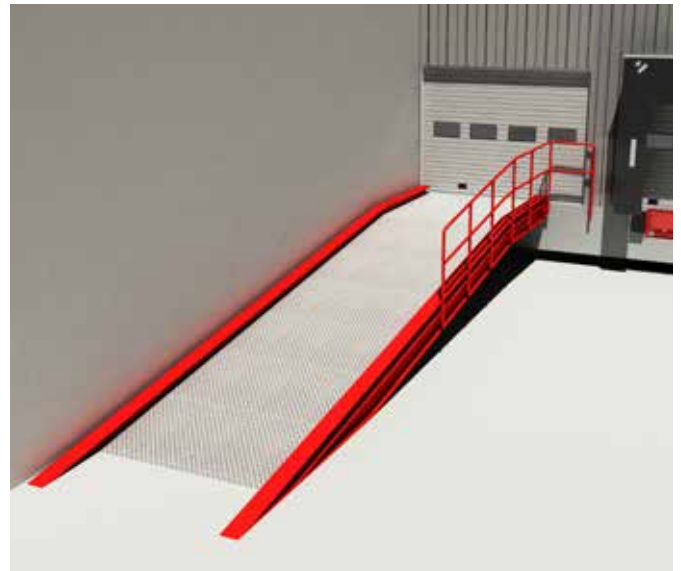
7.2 135 mobile dock leveller for loading and unloading from three sides

The mobile dock leveller has a hand-operated winch in the front axle or an electric drive which can be adjusted in height. The mobile dock leveller allows simultaneous loading and unloading of three vehicles or containers.



7.3 140 fixed dock board

The dock board is a fixed device which bridges the difference in height between the loading and unloading platform and yard level.



8. Dock shelters

Loading Systems dock shelters are manufactured to provide optimum stability and durability. Dock shelters provide an optimum seal between the internal and external environments, and assist with the reduction of energy consumption. As well as protecting your goods, dock shelters also contribute to an improved workplace atmosphere which can also lower your absence rates due to illness. A complete range is available to suit different types of vehicles.



Quality and durability

All Loading Systems products meet the highest quality requirements. For dock shelters we only choose the highest quality materials to provide a high degree of wear resistance which can also withstand the effects of UV-radiation as well as extreme temperatures.

Loading Systems only selects stable constructions to ensure that our dock shelters continue to maintain the best possible appearance over a prolonged period of time and the lower sides will show no deflection.

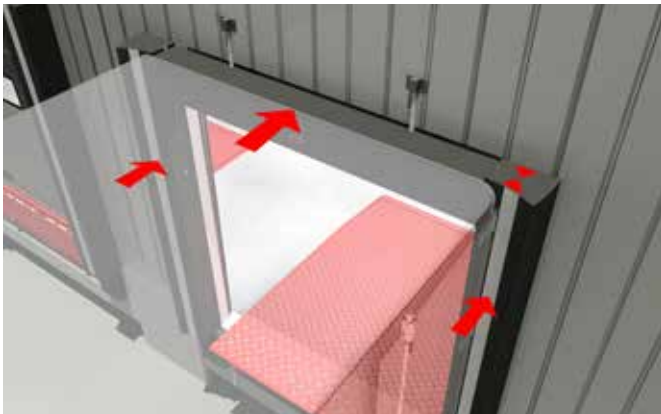
8.1 400 cushion dock shelter

The cushion dock shelters is best suited to vehicles which have minimal differences in size, for example a dedicated vehicle fleet.

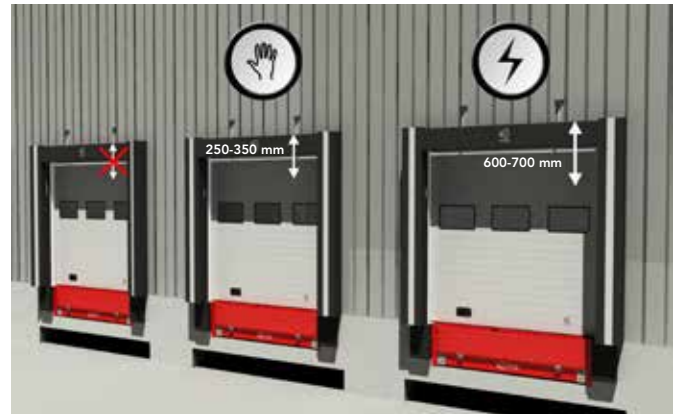
Loading Systems cushion dock shelters are often used at loading bays where high frequency of swapping vehicle trailers is common practice, or for use with mobile containers.



The cushion dock shelters ensure best draught seals and insulation is achieved. Sealing of the smallest gaps between the vehicle and wall of the building is achieved in most cases.



The horizontal top cushion can be supplied at a fixed height or can be supplied with an optional manual or electrical adjustment.



The cushions are available in a variety of different sizes (depth - width) and can be supplied with variety of colour options.

For extreme use, Loading Systems recommends reinforced side cushions by means of overlapping armoured plates along the entire height. These armoured plates follow the upward and downward movement of the docked vehicle. This increases the lifespan and durability of the dock shelter.



Cushion dock shelters ensure the most efficient and effective draught sealing and insulation

8.2 403 curtain dock shelter

The Loading Systems curtain dock shelters can be used for a wider variation of purposes and are well suited for loading and unloading operations with a wide variety of vehicle heights and widths.

Built-in

Based on your preferred aesthetical requirements, the curtain dock shelter can be incorporated into the wall of the warehouse or can be installed onto dock houses.



**A wide range
of options
to adjust the
building's
architectural
aspects**

Robust hinged frame

Most curtain dock shelters are delivered including a hinged frame. The frame design provides protection against damage if the docking vehicle is too high, or if a vehicle docks off centre. The front frame of the shelter moves on the hinge ensuring that the dock shelter and/or vehicle will not be damaged.

As a standard the dock shelter will move upwards to ensure that even in a compressed situation, the top curtain will not hang in the clear width during loading or unloading.



In situations with a low clearance height between the top of the shelter and any building overhang or canopy, a shear arm construction is recommended, which allows the shelter front frame to compress without increasing in height.



Dock markings

To assist the vehicle to dock on the centre of the loading bay opening, markings on the dock shelter curtains serve as guidance for the driver.



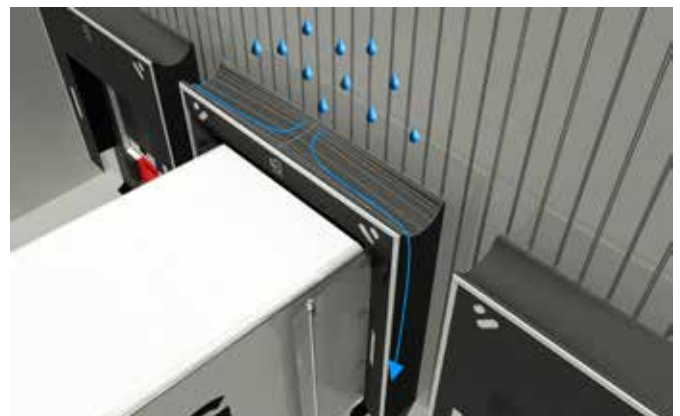
Enclosing seal or projection cover – continuous

The top and side curtain (or projection cover) is made from one uninterrupted continuous seal which prevents contamination or draughts into the warehouse environment.



Drainage

The design of the uninterrupted seal or projection cover ensures optimum drainage of the shelter roof, preventing water ingress into the door opening or onto the goods during loading and unloading. Drainage must be taken into account when designing the loading and unloading bay to ensure that rainwater will not run from the vehicle top into the loading and unloading opening.



Optimal sealing

Selecting the correct width, height and depth of the dock shelter, in combination with the height of the top curtain and the width of the side curtains ensures optimal sealing between the warehouse and vehicle whilst also providing a clear opening through which to load and unload.

Since each loading and unloading situation is unique, Loading Systems can deliver any required dock shelter width or height. Furthermore, the top curtain and side curtains are also available in a variety of dimensions.

Dimensions	
Width	3200 up to and including 3600 mm (standard 3400 / 3500 mm)
Height	3200 up to and including 4600 mm (standard 3400 / 3500 / 4600*mm)
Depth	0 / 600 / 900 mm
Side curtains - Width	600 / 700 mm
Top curtains - Height	900 / 1000 / 1200 mm
* Exit ramp model	

Innovative rolling curtains to bridge differences in height

When the difference in height between the shelter and the vehicle height is too large for a standard length top curtain, dock shelter can be supplied with an adjustable top curtain. This could apply to loading and unloading openings which are used for both high and low height vehicles, such as double-decked trailers and single deck vehicles or even delivery vans.



The electrical driven Loading Systems Rollerblind bridges a difference in height up to 2500 mm. The Rollerblind is integrated in the Loading Systems CombiControl control boxes.

The Rollerblind can also be retrofitted to existing shelters and most other dock shelters supplied by other manufacturers.



Top curtains and side curtains

To ensure optimum flexibility and durability the side curtains on Loading Systems dock shelters include a monofilament in the fabric or we can reinforce the material with a laminated suspension spring.

To achieve an optimal seal it is essential that the top curtain folds over the corners of the vehicle. This requires an extremely flexible construction which is why Loading Systems uses a polyester fibre with multifilament weft or fabric which is reinforced with laminated suspension springs.

Top curtains are also available with the following options:

1. standard top curtain
2. double laminated top curtain
3. cut-in top curtain

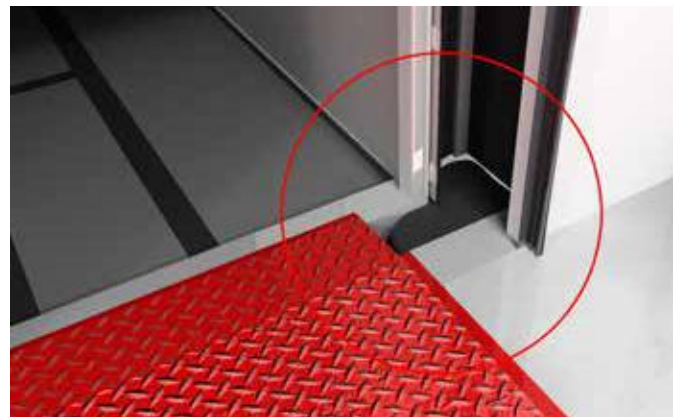


Heavy fabric can be delivered as a standard, either in black (≈RAL 9011) or in blue (≈RAL 5010). The fabric reinforced with laminated suspensions spring is available in a variety of colours.

The dock markings are available in a wide variety of colours. This allows you to fine-tune the colours to your corporate image or you might want to match the colour scheme to the dock leveller or industrial door.

Recommended options:

1. dock number on top curtain
2. bottom corner pads



Wide range and flexibility is well suited for loading bays with a variety of vehicles

8.3 405 curtains dock shelter with a special foam core

The Loading Systems PowerShelter 405 curtain dock shelter is extremely durable. This is achieved by a special foam core built into the side sections and an automated lifting roof section. This increases the life span of the dock shelter and improves the aesthetical appearance of the warehouse.



The 405 dock shelter is particularly well suited to container vehicles or vehicles which raise and lower over extreme distances during the loading and unloading process. For this type of situation the 405 curtain dock shelter is the perfect solution.

Roof section - adjustable in height

The 405 curtain dock shelter is provided with a roof section which has an automated lifting roof, which allows the roof to lift or move backwards when used by "high" vehicles (up to 4500 mm).



Side sections - allowing sideward and backward compression

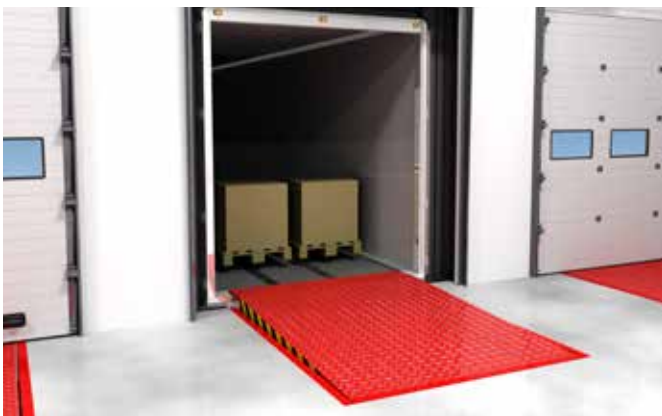
The Loading Systems 405 curtain dock shelter side sections provide optimum flexibility and are supplied with a foam core which significantly prevents damage which can frequently occur if a vehicle docks on off centre.



Loading Systems dock shelters are attractive, ultimately robust and durable

8.4 407 inflatable dock shelter

The Loading Systems PowerShelter 407 inflatable dock shelter moulds itself into the contours of the vehicle and is the most effective way of sealing between the vehicle and the warehouse. It is particularly well suited to vehicles which vary significantly in size.



Built-in or front building

Based on aesthetics of the building, the dock shelter can be built-in into the warehouse at the construction stage or it could be incorporated into a dock house.



Large variety of vehicles

The 407 inflatable dock shelter is extremely well-suited for a large variety of vehicle heights and widths. The inflatable top cushion can be inflated up to a height of 1700 mm without bulging outward, as an option. The Loading Systems 407 inflatable top cushion stops unfolding upon contact with the roof of the vehicle.

Extremely well-suited to level access ramps

The inflatable dock shelter is excellently suited to level access ramps. When not inflated, it leaves the opening of the level access ramp completely free of obstruction allowing the building to be accessed without any hindrance to the opening. The 407 dock shelter facilitates the effective sealing of both high and low vehicles including delivery vans.

Dimensions

The inflatable cushion, which includes a folding operation, is delivered by Loading Systems in a variety of dimensions.

The steel insulation sandwich panels for the roof and side panels can be manufactured in various colours. The same applies to the dock markings and cushions.

Dimensions	
Width	3200 up to and including 4500 mm (standard 3500 mm)
Height	3700 up to and including 6000 mm (standard 3700 mm)
Depth	0 up to and including 1200 mm (standard 800 mm)
Side cushions - Width	600 / 700 / 800 mm
Top cushion - Height	1100 / 1300 / 1500 / 1700 mm

The most efficient and durable sealing for loading and unloading bays

Durable materials & construction

During the docking process, the inflatable cushions are fully retracted behind the docking lane markings. Only inflates when the vehicle has effectively docked on the loading bay with the cushions inflating within seconds. Due to low contact friction between the shelter and the vehicle, the 407 dock shelter is an extremely durable model.



In the event of a docked vehicle departing unexpectedly while the cushions are still inflated, the free moving fastening ensures that the inflated cushions can rotate outward, which prevents damage to the shelter components and cushions.

When compared to other Loading Systems dock shelters, the 407 dock shelter cushions are extremely tear-resistant and are resilient to damage by sharp or protruding vehicle parts or premature vehicle departures. The welded black PVC fabric cushions are also resilient to extreme weather conditions.

The heavy duty fabric used in the Loading Systems cushions is extremely leak resistant. Loading Systems also uses a mechanical tube motor driven retraction which ensures the cushions are always neatly stacked behind the dock lane markings when not inflated.

Integrated operation

The Loading Systems 407 dock shelter control station is integrated in the Loading Systems CombiControl control boxes. Upon request, the 407 dock shelter can also be programmed to suit the logic of your preferred operating sequence. To ensure optimum effectiveness is achieved we always ensure that the loading bay door can not be opened until the 407 dock shelter is inflated.



9. Dock houses

Investments and tax advantages are something you should always consider when designing the warehouse layout. This is where dock houses can be an economic attractive alternative to traditional dock leveller pit systems. A cost-effective externally mounted dock house improves the utilisation of the relative expensive internal warehouse space within the building.



Economically attractive

Only a minimum of structural factors need to be considered for a dock house. This is why dock houses are also well suited to expanding existing buildings, and as the design is a modular portable construction they are particularly well suited to locating on leased properties. Furthermore, in new building projects, dock houses

are significantly more cost effective because the design does not require expensive concrete openings or pits creating in the building for dock levellers. Dock houses can easily be relocated to another part of the building or can even be relocated to an alternative site if this is something which you are considering at sometime throughout the products lifetime. Furthermore, because the loading and unloading opening is situated in a dock house externally, this allows the warehouse environment to be fully closed which means that the dock house is also a HACCP solution.

Thermal insulation benefits

Due to thermal separation between the building and dock equipment, sealing of the building is improved resulting in significantly improved energy efficiency.

Fully integrated modular construction

The dock house incorporates a steel platform with the required size of dock leveller and dock bumpers to suite your operational needs. We offer a selection of insulated and non-insulated roof and wall panels in several colours, profiles and finishes to match your requirements and in most cases we can even match the existing scheme of the building. The front of the dock house can be sealed with the addition of a dock shelter which is available as an option.



By integrating a dock leveller into the dock house most dock heights can be adapted to provide a seamless interface between the vehicle height and the internal warehouse floor.



Dock houses can be delivered either as individual units or linked together. When external yard space restrictions are an issue, we can even offer single units or linked units in a saw tooth arrangement.



Dock houses can also be designed to allow the vehicle doors to be opened after docking.

Platform construction

In situations where insulation or extreme weather conditions are an issue, Loading Systems can offer standard or customized dock house platforms in either insulated or un-insulated constructions.



10. Protection systems

The area around the loading bay and the vehicle can be a dangerous working zone. Vehicles have been known to drive away from the loading bay prematurely during the loading or unloading process, this is known as a "Drive-Off". When this happens, the resulting consequences can lead to serious injury or even a fatality. Vehicles "creeping" from the loading bay can also lead to a dangerous situation.



10.1 505 vehicle restraint system

Premature vehicle departure or "Drive-Off"

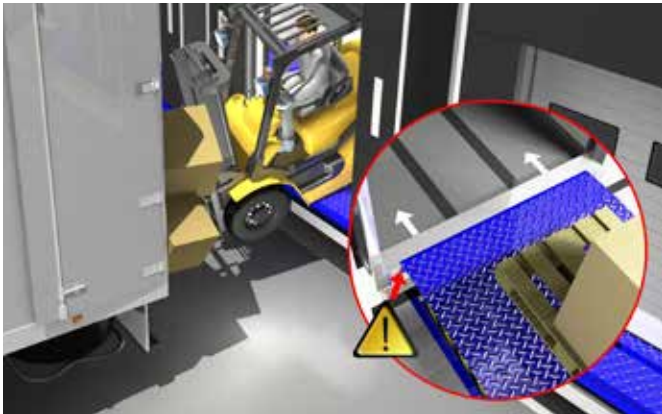
Most accidents near and on the loading and unloading platform are caused by premature vehicle departure or "Drive-Off". This is often due to inadequate communication between the vehicle driver and forklift truck driver, or perhaps the warehouse operative.

"Creeping" of a vehicle or trailer

Another unsafe scenario is caused by "creeping". When a forklift truck or MHE moves from the warehouse to the vehicle the resulting momentum forces can cause the vehicle to creep away from the warehouse. When this scenario occurs, the dock leveller lip can drop from the bed of the vehicle which can also lead to a dangerous situation. This scenario can occur even when the brakes of the vehicle are activated and the wheels are chocked. When this scenario occurs, the dock leveller lip can drop from the bed of the vehicle which can also lead to a dangerous situation.

When this happens, the resulting consequences can lead to serious injury or even a fatality. The Loading Systems PowerLock 505 prevents vehicles and trailers from "Drive-Off" situations and also prevents vehicles from "creeping" away from the loading bay.

The Loading Systems vehicle restraint system locks most vehicles or trailers onto the loading bay to create an ultimately safe situation.



PowerLock 505 - Benefits

The PowerLock 505 can easily be operated and is virtually free from failures. This is achieved because we have designed a product with a limited number of moving parts. We have designed a product which restricts the number of mechanical drives to only the essential components. This also results in simple and minimum maintenance requirements.



Operation

The warehouse operative controls a push button station inside the warehouse which operates a hydraulic cylinder to mechanically lock the rear most wheel of the vehicle. Built-in sensors detect the vehicle wheel position to ensure the wheel lock system is always extended to the correct position, guaranteeing that the arm of the wheel lock is always locked up hard against the vehicle wheel and preventing any "creeping" from the loading bay.

Communication

The wheel lock system's movement is indicated by means of an acoustic and optic signal. External (red/green) and internal (red/orange/green) signal lights indicate that the vehicle is locked and restrained, and that loading and unloading process can be safely initiated. Clear and concise signage is also provided for the vehicle driver giving clear instructions on when it is safe for the driver to depart from the loading bay.

Construction

The robust, hot-galvanised construction is designed to keep a parked vehicle locked safely in place. The design also incorporates an integrated vehicle wheel guide which ensures that the vehicle is always positioned in the centre of the loading or unloading bay. These design features ensure the loading and unloading process is a simple process and also prevents damage to the equipment and vehicle.

The hydraulic Powerlock 505 can easily be installed on a concrete floor, steel plates and most other surfaces. The system is designed to be robust enough to cope and perform under all weather conditions.

Benefits

- Optimal safety.
- Suitable for most types of vehicle models.
- Push button operation for hydraulically locking / unlocking of the vehicle.
- Possibility to interface and interlock with dock leveller and industrial door controls.
- Automatic vehicle wheel detection.
- Theft-prevention benefits (unlocking of wheel from the inside only).
- Functions as a wheel guides for docking vehicles.
- Functions under all weather conditions.
- Hot-galvanised materials.
- Powerpack mounted remotely.
- Maintenance-friendly due to minimal mechanical drive components.
- Emergency override unlocking system in the event of power failure.

10.2 Wheel chocks

Wheel chocks are an alternative to increase safety near and on the loading and unloading bay. Wheel chocks are available in a variety of models.

They can be integrated with sensors, and can even be connected to Loading Systems CombiControl control boxes. If required, the dock door can only be opened after the wheel chock has been positioned in front of the wheel, after which the external traffic lights signal switch to red and the internal signal lights switch from red to green.



**Loading Systems,
a safe choice**

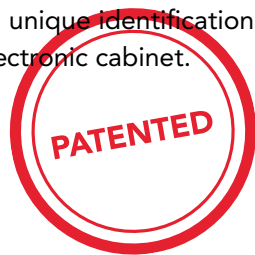
10.3 Dock Management System

The Dock Management System, jointly developed by Loading Systems and Traka is a unique, easily installed and affordable solution to prevent an industry problem that has caused countless accidents and injuries.

It prevents vehicles driving away from the loading bay before the dock doors have been safely closed.

How does it work?

There are a number of possible implementations depending upon the degree of management control required, however, in all cases the process will involve attaching the drivers' vehicle keys to an iFob – an intelligent metal bullet shaped device containing an electronic chip with a unique identification that is then stored in a special electronic cabinet.



**Prevent departure
prior to the safe
closing of the dock
doors**

When a driver arrives on-site and checks into the transport office, the keys are snapped onto the iFob. The electronic cabinet identifies and confirms which loading or unloading bay is to be used.

The more advanced versions ensure that the dock door cannot be opened until the keys are safely retained in the cabinet and the keys cannot be taken until the dock door is fully closed.

The dock door may then be opened using the existing door control or with an iFob, depending upon the method selected.



Scenario 1

Identification and Vehicle Key Management

A simple solution that retains a driver's vehicle keys and identifies which loading or unloading bay the vehicle has been directed to.

The supervisor then has control over the driver's keys and can see that the vehicle is on site.

There is also an audit of the transport office taking and returning the keys to the driver.

Scenario 2

Vehicle Key Management and Intelligent Dock Control

A solution to retain a driver's vehicle keys, identifies which loading and unloading bay the vehicle has been directed to, and ensures that the dock door cannot be operated without the vehicle keys secured in the electronic key control cabinet.

The incoming driver is allocated the loading and unloading bay, parks up and reports to the transport office where his keys are handed in. The keys are then temporarily attached to an iFob and inserted into a socket within the electronic key control cabinet which corresponds to the particular loading and unloading bay door. As the iFob is inserted, and locked in place, an interlock indicates that the dock door may now be opened. At the same time a "paired" iFob is released from the key control cabinet. This paired iFob is the electronic key that will allow the dock door to be activated and can be used by an authorised member of staff or even the driver, if applicable.

Upon completion of the vehicle loading / unloading and after the dock door is fully closed, an automatic signal is sent to the electronic key control cabinet, indicating that the door is safe and that the driver's keys can be released. However, the temporary owner of the paired iFob must return and insert the iFob into the electronic key control cabinet before the iFob with the driver's keys are released.

This process prevents the driver from driving the vehicle away from the loading and unloading bay, until the dock door is securely closed and the area safe.

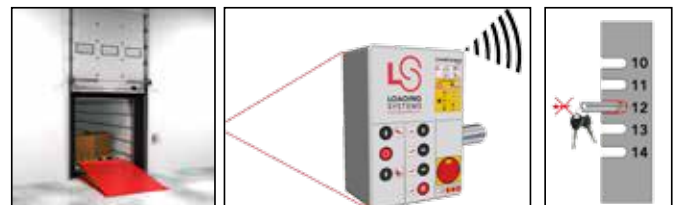
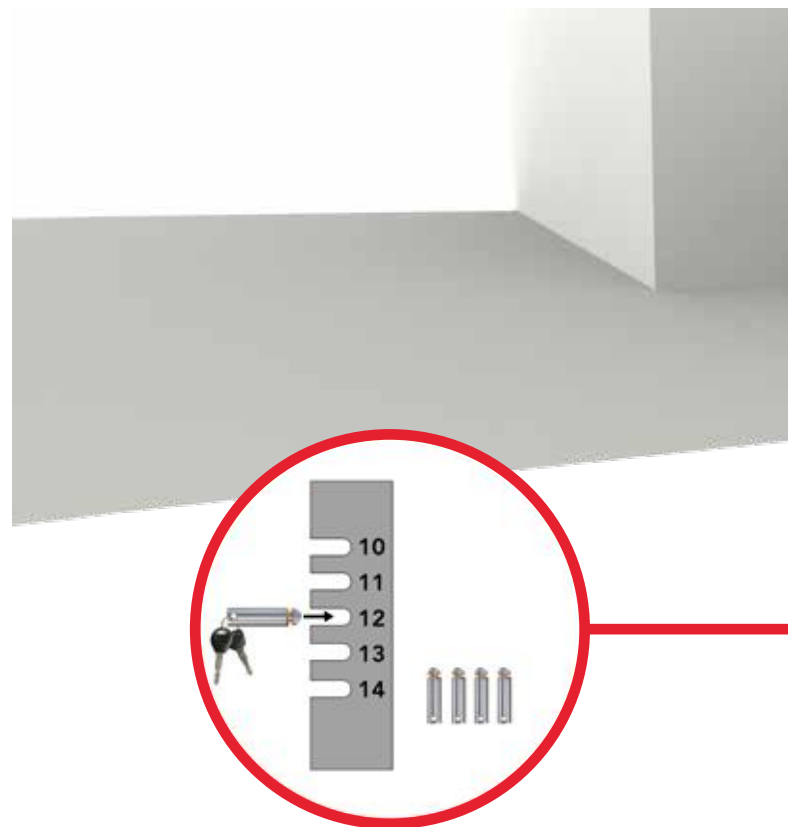
There is also an audit of the transport office taking and returning the keys to the driver.

Scenario 3

Intelligent Dock Control and integrated (internal) transportation means control

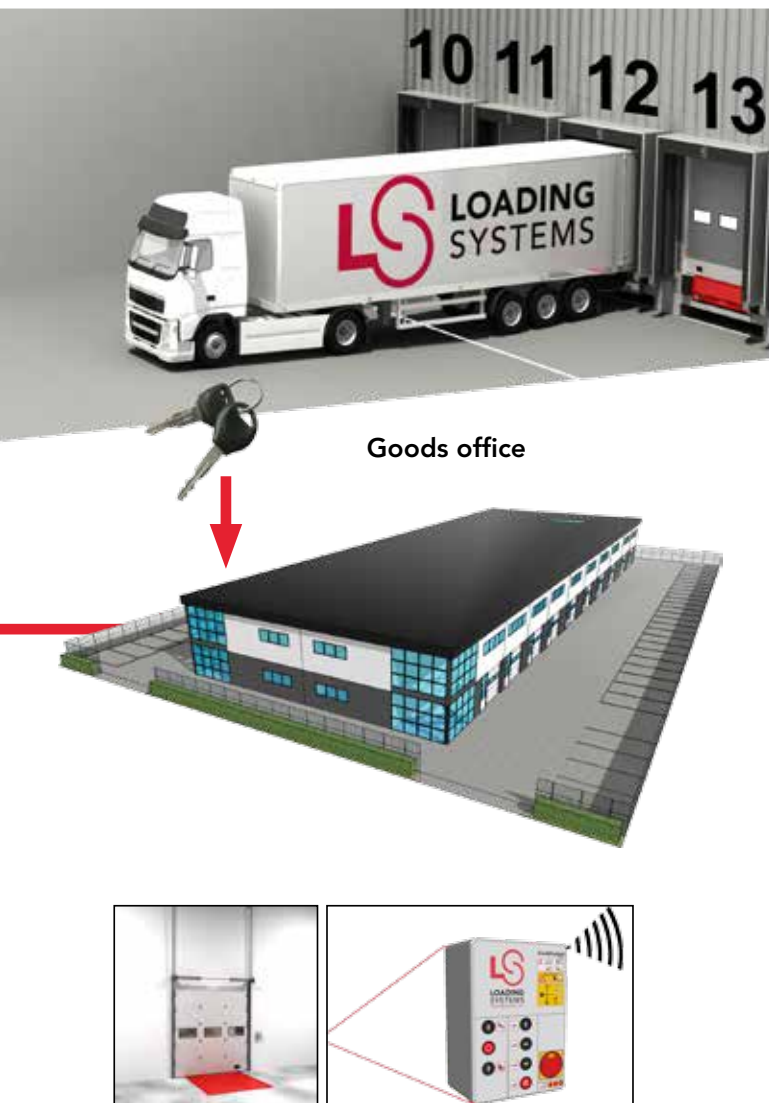
An advanced solution to retain a drivers' vehicle keys, to identify which loading bay the vehicle has been directed to, and to ensure that the dock door cannot be operated without the vehicle keys secured in the electronic key control cabine. It also allows the intelligent iFob to operate additional products, such as fork-lift trucks.

The incoming driver reports to the transport office, parks the vehicle at the loading and unloading bay, and hands over the vehicle keys, (as in scenario two) and the interlock ensures that the keys cannot be taken until the door is safe.



But the dock door may only be opened by a user who already carries a valid personal iFob, one that may also activate additional products, such as fork-lift trucks, cleaning machines or other specialist equipment. The activity of opening the door is also recorded in the iFob providing an audit of use.

This offers the concept of an integrated system and the use of an electronic key for all warehouse equipment. Furthermore the system may also be integrated with an existing access control system to allow management of the available movable equipment as well as access to the building.



System benefits

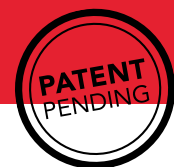
An increased safety, security and an improved operational efficiency are the primary system benefits.

The Dock Management System has been designed for installation in warehouses and distribution centres where greater control and flexibility is required and it can easily be retro-fitted to existing systems as well as being specified on new installations.

In summary the principal benefits of the system are to:

1. Prevent vehicles from driving away from a loading and unloading bay until the dock door is closed.
2. Ensure that vehicles are directed to the correct loading bay.
3. Control related to who can control product operation:
 - a. Improved safety;
 - b. Improved building management;
 - c. Minimising human errors;
 - d. Increased energy-saving potential.
4. Integrated intelligent system:
 - a. Managing dock equipment control;
 - b. Applicable in combination with other products, vehicles and facilities.
5. Provides management of performance indicators, such as:
 - a. Complete log of all user activities;
 - b. Number of cycles the doors have been activated;
 - c. Average duration of loading and unloading;
 - d. Planned service and maintenance.
6. Allows full integration with the Loading Systems Advanced Control Centre.

By integrating the Loading Systems Advanced Control Centre with the Traka Dock Management System a complete warehouse management is created. It creates structure, increases safety and reduced the risk on human error.

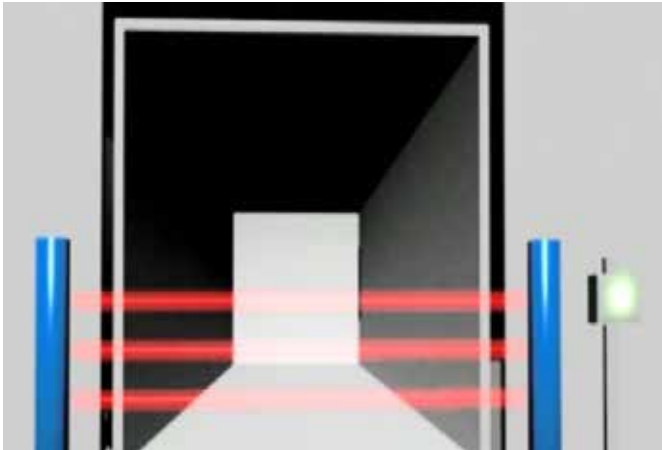


11. Automatic Truck Loading System

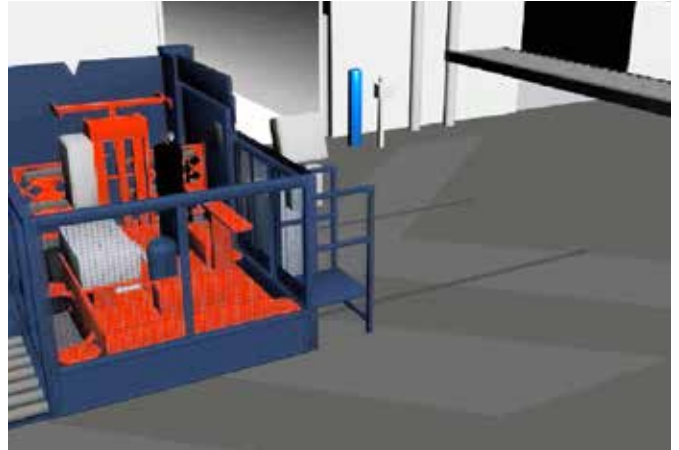
ATLS is a fully automated truck loading system, which makes your loading and unloading operations faster, safer and with lower operational costs.



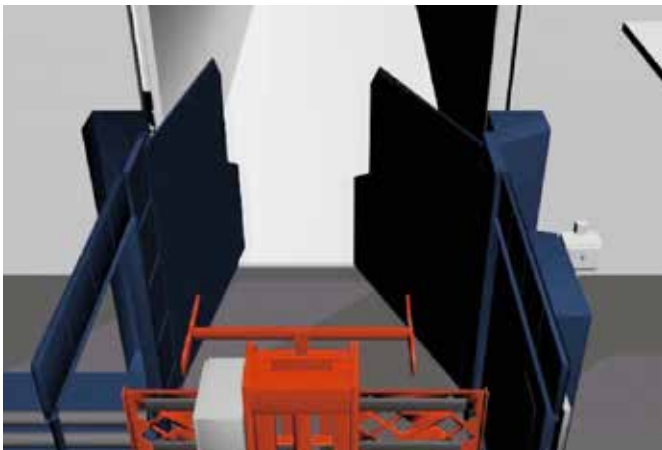
How it works



1. When the truck is fully docked on the opening a light curtain secures the area.



2. ATLS receives the order and moves to the designated dock opening.

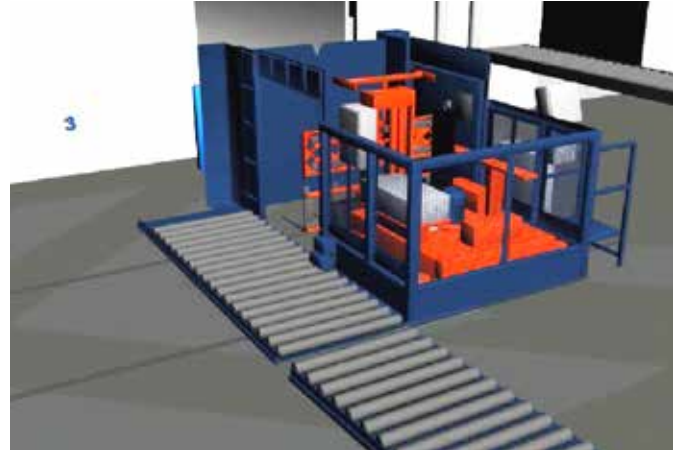


3. Once in position ATLS opens its doors, measures the truck and compares it with the desired loading pattern.



4. Simultaneously ATLS centres itself with the actual truck position.

A fully automatic and efficient loading and unloading system



5. Pallets, or load units can be delivered in three different ways:
- a. via an overhead conveyor above the dock doors;

- b. via a plant conveyor aligned with the dock doors;

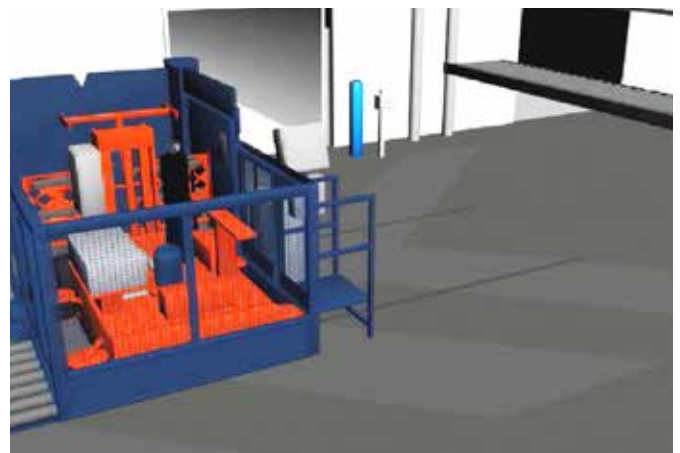
It is impossible to imagine a logistic environment today without automation processes



- c. via an ATLS Transfer Cart, which moves pallets from the preparation area.



6. ATLS Loading Module enters the truck and deposits the load.



7. When loading is finished ATLS closes its doors and moves to the next task.

In today's logistics and manufacturing environments automation plays an important role, but automation is not always the first choice due to the following concerns:

- Expensive to implement, with a long payback period.
- Difficult to move, remove or modify.
- High mechanical and/or software complexity, which often makes implementation and operator familiarisation difficult.
- When any part of the system fails, the whole system is usually disrupted.

ATLS success is based on the ability to address these concerns and deliver benefits through:

High Capacity

- High loading speed (up to 150 pallets per hour).
- ATLS has a high capacity of loading 4-5 trucks per hour and one ATLS machine can service up to 20 loading bays.

Improved operation

- Compact, easy to integrate with existing operation.
- Greatly improves shipping accuracy.
- Full traceability of product.

Safety

- Eliminates / reduces fork lift traffic.
- Eliminates / reduces fork lift related accidents.
- Eliminates/reduces human input.

Flexibility

- Handles any type of pallet, slip sheet, skid, rack or other unitized products.
- Works with non modified trucks, trailers and containers.
- ATLS works with soft, or hard side trailers.
- ATLS uses standard, non modified loading docks.
- One ATLS performs both automated loading and unloading.
- ATLS still allows manual operation.
- ATLS works with solid panel, or folding doors.
- ATLS is suited to work in ambient or refrigerated warehouses and freezers.

Improved environmental protection

- ATLS uses the power supply of the facility and eliminates the need for batteries and the handling of hazardous materials.
- Low energy consumption (approximately 2.5 kwh per truck load).
- Reduced loading area lowers the energy consumption for chilled and frozen distribution.

Quick Return on Investment

- Reduces labour cost.
- Reduces product damage.
- No battery maintenance.
- Reduced floor space for loading.
- Minimizes truck waiting times.



12. Renovation & replacement

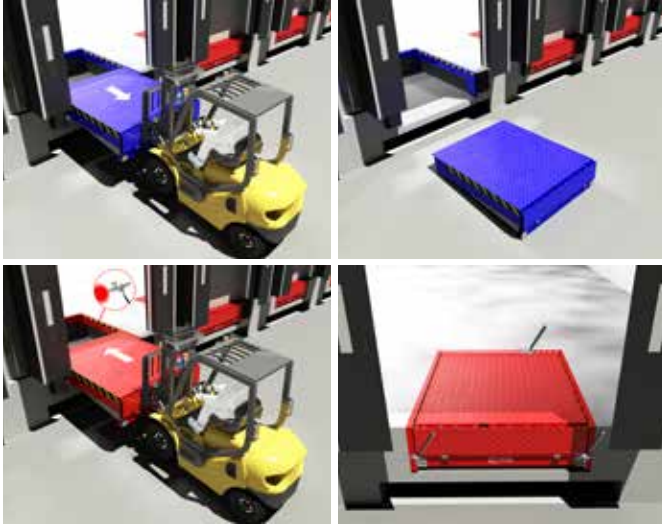
After years of continued use, the economic life span of your industrial door or dock equipment will eventually come to an end. When this happens, Loading Systems should be your choice of partner for when considering what to do next. We can deliver most door and loading bay equipment as standard solutions.



Practical and customer-focussed solutions for your existing platform

12.1 Dock leveller - quick replacement

Loading Systems manufactures customized dock levelers for the replacement market which are designed to speed up the replacement process so that your loading and unloading bay is up and running again within hours.



12.2 Dock shelter curtains replacement

Dock shelter curtains are subjected to extreme wear and tear and are often damaged by protruding vehicle parts.

Loading Systems ensures the swift replacement of your dock shelter curtains. Often, we can avoid the need to replace the supporting shelter frame so that only the curtains need to be replaced.

12.3 New loading and unloading station for an existing building

Loading Systems offers you a practical and customer-oriented solution to quickly transform the look and feel of your existing building with new replacement loading and unloading bay equipment.



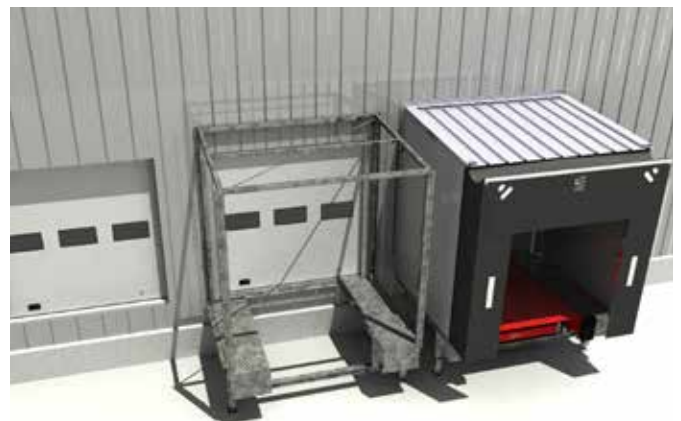
12.4 From design to completion

Since we have the expertise to offer all aspects of project management from design to completion, Loading Systems is able to offer you a total package. Design and engineering drawings are made in collaboration with your own needs. Our own production units ensure customized manufactured solutions. Loading Systems will manage and coordinate the total project for your organisation, even including the civil and building works.

Loading Systems can even create additional short-term, temporary or permanent loading and unloading space.

12.5 Flexible solutions

We offer a comprehensive range of standard or bespoke dock houses and modular steel platforms which are extremely adaptable to your needs. These can either be permanent or manufactured so that they can be relocated at an alternative location in the event of a relocation or re-organisation.



13. Service

Besides providing products and systems, you can also contact Loading Systems for an extensive range of service programme options throughout Europe. Our service concept focuses on a full service programme 24 hours per day, 7 days per week.



Our expertise and experience in this field means we are able to repair, replace and maintain dock equipment and industrial doors manufactured not only by Loading Systems but also by all other leading manufacturers. When you call on Loading Systems services you can be assured that we will do everything possible to bring your equipment back on line so that you can continue using your loading bay equipment with minimal disruptions to your operations: **We take care.**

13.1 Efficiency, comfortable working conditions and safety

We manufacture products developed by our own Research & Development department. To ensure you always receive the best products we only use the highest quality materials in conjunction with the most technologically advanced manufacturing processes. We never lose track of the actual application of the products and we ensure your logistics environment achieves optimal accessibility and practicality. Efficiency, effectiveness, comfortable working conditions and safety are our priorities.

13.2 One partner for all your needs

When it comes to arranging the layout of the loading and unloading bay area, Loading Systems has a proven track record of being a leading and reliable consultancy partner. Once you have chosen your solution, you can rely on us to deliver and install the products. We fully understand the importance of delivering the programme and failure to achieve the completion date is never an option. After completion, we provide a guarantee and all the relevant supporting documentation for the end user. We can also advise you on the recommended maintenance and service schedules specifically



One single reliable partner for all your products

tailored to your usage rates and operational requirements. We take care to ensure that after completion of the installation stage that you continue to achieve the optimal usage of your investment.

13.3 Service programme

A good maintenance regime guarantees and protects the lifetime of your equipment and products, and also minimises the impact of downtime. You can further minimise disruption to your operations by entering into a service contract. Loading Systems offers you an extensive service programme tailor-made to your own situation. All you need to do is determine which service contract best fits your operational needs. After this you can rely on us to take care of all your maintenance requirements.

Through prior consultation, you can even determine when our service engineers attend your premises. If you need our attendance at weekends or throughout the evening, no problem, we can tailor a solution to suit your needs allowing you to fully focus on your operational management without unnecessary interruptions.

13.4 Safety and regulatory requirements

In most countries, there is a number of health and safety related statutory and legislative obligations which you have a responsibility to adhere, and which are very specific to loading and unloading bay equipment. All Loading Systems products are delivered in accordance with the relevant EN standards and Machinery Directive Guidelines, and have a CE marking.

Most legislation requires that only an expert with thorough specialised knowledge is able to inspect, service and maintain certain types of loading bay equipment. In the event of equipment damage or operator accidents, insurance companies often require evidence that the equipment has been subjected to a good maintenance regime by a competent person as a prerequisite condition to settling any claim. With Loading Systems servicing and maintaining your equipment you are well-prepared. In the event of an insurance inspection,



If you choose a service contract including the Advanced Control Centre option, your loading bay worries are guaranteed to be a thing of the past. Besides benefiting from an extended guarantee period we ensure a quick solution for any loading bay equipment failures, carried out free of charge. Please refer to the options described in our Service brochure.

tion, the maintenance history can be quickly proven. Our extensive range of service and maintenance contracts, do not only meet all legal and regulatory requirements, but they also meet many of the requirements set by insurance companies.

45 years of experience as specialist in loading and unloading

13.5 Energy-saving and environment

Loading Systems accepts its responsibility to create a better environment. This includes our manufacturing processes, which involves products and installations designed and manufactured using state-of-the-art technologies. As such we prevent energy loss resulting from 'leaking' heat or cooling. We offer a wide product programme which contributes to energy-saving measures. We manage our fleet of vehicles using the latest planning tools and satellite navigation systems to reduce our carbon footprint.

13.6 Renovation and replacement

Everything has a lifetime and loading bay equipment is no different. If after many years of use, the economic lifetime of your industrial door or dock equipment reaches an end, we would be pleased to assist you in finding the best and most cost effective solution. We are confident that we have standard products and services readily available for you, for all manufacturers' products and all types of installations. However, if a standard solution is not adequate for your loading and unloading situation, Loading Systems will find a solution specifically tailored to your logistic environment. In nearly all situations, an assessment indicates that no significant modifications are required. As such you profit from a suitable solution and avoid unnecessary additional costs.

We can also ensure constructional solutions for you. Even if you need an additional dock leveller or industrial door for example, we can provide a solution to suit your needs.

13.7 Lease Contracts

If you need to spread the costs of your capital investments over several years, then Loading Systems also offers attractive lease contracts for new equipment.

Continuity and accessibility are the key priorities in our Service Concept. Our aim is to have our products and services support your operational management as best as possible.

We take care.

**From start
to finish,
guaranteed
no worries**



Dock equipment



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