

Product catalogue

Industrial | *Commercial, utility and industrial buildings*



EN





Your partner in **logistics solutions**

L-DOOR is a 100% Belgian company that develops and manufactures high-quality and totally reliable sectional doors. L-DOOR's versatile range is supplemented by other logistics equipment, including loading bridges, dock shelters, wheel guides, dock buffers, high-speed doors, fireproof doors and roller shutters. Our advisers will work actively with your company and guide you as a customer through the entire process, from the design stage, right through to installation. L-DOOR also provides

excellent aftersales services, 24 hours a day, 7 days a week, to maximise the service life of your investment.

L-DOOR guarantees top-quality customisation and a high level of service.

So feel free to make high demands.



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pro line | by I-door



| Your one-stop shop



Your **one-stop shop** for total logistics solutions

Are you a business owner/manager looking for a top-quality sectional door for your commercial building? Or are you a facility manager about to design and fit out a warehouse? Whatever your role in your business, welcome to L-DOOR. We offer you a comprehensive range of logistical equipment. L-DOOR specialises in sectional doors. These doors are designed and manufactured totally in Belgium. But L-DOOR also offers you much, much more! In addition to our range of sectional doors, we also have high-speed doors, fireproof doors and

industrial roller shutters. All of our products are of the highest professional quality so that you obtain maximum return on your investment. L-DOOR can also install your loading facilities with all of the equipment you may need, such as loading bridges, dock bumpers and dock shelters. L-DOOR can also offer you a maintenance agreement tailored to suit your business. Maintenance and repairs with service 24 hours a day, 7 days a week – all at very competitive prices. To sum up, L-DOOR is your ideal partner, your one-stop shop for all logistical solutions.





Professional **advice** for the best possible **performance**.

Whether you are looking for a sectional industrial door or a full range of logistical equipment that delivers the highest performance, at L-DOOR we will be happy to advise and guide you in your choice. Our professional advisers are totally familiar with all of our products and know all of the possibilities they have to offer. That way you can be sure that you will always make the right choice and you and your employees will be able to work with the best equipment. If you have a technical question, would like a price quote or would like to make an appointment with one of our advisers, you can reach us in the following ways:

Contact us:

1. By telephone on the general number 053 64 44 00 or the service number 053 64 44 44 (outside office hours).
2. By e-mail at services@l-door.be.
3. Via our website at www.l-door.be.
4. By visiting our head office: 29 Denderstraat, 1770 Liedekerke.





Installation and service by experienced professionals.

Certified installation service

Our installers are VCA-certified and have all been professionally trained. This means that they are fully able to install and set your door safely and with total precision. The site inspector will visit the location prior to installation to check that the installation site has been prepared in accordance with our installation drawings. This enables us to guarantee safe, problem-free installation. L-DOOR installers are also ISIB-certified.





Maintenance and repairs for all makes of door. 24/24, 7/7.

Maintenance

L-DOOR always offers you a maintenance contract tailored to your needs, at very competitive prices. Even if you already have existing doors and/or loading equipment made by a different manufacturer, please do not hesitate to ask us for an L-DOOR maintenance proposal.

Depending on the usage intensity of your system, we advise you to schedule at least one or two services per year. If your doors and loading bridges are automated, an annual service is required by law.

Regular maintenance of your doors and loading bridges by qualified engineers is a legal necessity.

In line with the requirements stated in articles 10 & 11 of the Codex, Section VI, part I and the Machinery Directive 98/73/EC, these products must be inspected and serviced regularly, as well as fully documented.

The statutory maintenance obligation:

1. 89/654/EEC Health and Safety in the Workplace

The employer is deemed to comply with maintenance requirements regarding work tools, as defined by the manufacturer. Any defects that may endanger the health and safety of workers must be rectified immediately.

2. 2006/45/EC Use of Work Equipment

The employer must ensure that all work equipment is maintained properly throughout its entire service life, in such a way that it meets the requirements stated by the manufacturer at all times.

3. RD 12/08/1993 Codex on Wellbeing in the Workplace

The employer must ensure that all equipment undergoes periodic inspections, carried out by qualified persons. The employer must ensure that all equipment is maintained through appropriate maintenance in a condition that enables it to comply with the applicable requirements throughout its entire service life.

Repairs

Our repair service is standing by, 24 hours a day, 7 days a week, to repair your doors and loading systems made by all manufacturers, quickly and professionally. These repairs will be carried out at very attractive and transparent prices, enabling you to avoid any unnecessary expense.

Warranty

L-DOOR offers you an extensive range of warranties. Ask your personal adviser for more information.



| Quality management

Since introducing its quality management system, L-DOOR has worked on a daily basis to optimise its operating processes in terms of organisation, administration, production and customer orientation. Our business strategy focuses on strengthening our customer relations, while optimising our product quality. To achieve this aim, an in-house R&D department and related training centre were established in 2008. Indeed, the strength of L-DOOR is based on its customer-focused quality and flexibility. L-DOOR also strives to achieve perfection in the areas of health, safety and the environment. L-DOOR's internal prevention department aims to keep the number of accidents to a minimum – not only in terms of occupational accidents in the workplace, but also accidents that occur with vehicles or during operations. Staff are kept aware at all times of the safety rules in place, as well as about details regarding the correct clothing and traffic rules, etc. They are also provided with the correct tools for their work. This applies both to our blue-collar workers and white-collar employees.

When it comes to health, L-DOOR makes every effort to

accommodate its workforce in the best possible conditions, creating a fresh and pleasant working atmosphere. For administrative staff, this means working in attractive, pleasant offices, while installers are provided with an appropriate company van, fitted with the basic equipment of a modern car, and for workers, it means having a spacious and convenient workshop with an area to store stock. All groups of L-DOOR employees are provided with the right tools and equipment to enable them to carry out all of their tasks in a responsible manner.

This quality management system complies with all of the rules and requirements in terms of quality, safety, health and the environment, as used and in compliance with the requirements of ISO 9001 and VCA**. These rules apply both to L-DOOR's own employees, as well as to any subcontractors the company may call on. The VGMK management system is supplemented with tests and certificate guarantees in relation to equipment, on the one hand, and to the qualifications and experience of employees, on the other.





In today's society, the environment has become something of a 'hot item'. People and companies are striving daily to reduce their carbon footprint. Naturally, this concern also applies to L-DOOR and we try in all sorts of ways to cause as little harm as possible to the environment. For example, L-DOOR works exclusively with non-destructive products when it is installing a sectional garage door. And by having all of our fleet of vehicles maintained regularly, we also make every effort to keep any harmful emissions from our vehicles to a minimum.

Our installers are required to leave every worksite clean and tidy, and to take all rubbish and waste (packaging materials, cardboard, the residue and offcuts from any grinding or cutting work) back to the head office for disposal in the waste sorting containers provided for that purpose. These containers are collected each week by accredited providers that are all members of Val-I-Pac. In this way, L-DOOR can be sure that all rubbish and waste is properly recycled.

The necessary measures to protect the environment are also taken in the spraying department. Any emissions are filtered and the professional spray booths comply with the statutory standards. L-DOOR has the required environmental permits and all paint and solvent residue is stored in the containers provided for that purpose by the waste processing company, Van Gansenwinkel, which is also accredited by and a member of Val- I-Pac.

L-DOOR's administrative staff makes every effort to store as many documents as possible on the server system, so that paper usage is kept to a minimum.

In 2011, solar panels were installed across the entire surface of the roof. These panels enable more than half of the company's annual power consumption to be generated via the sun. And, naturally, L-DOOR continues to aim for 'green' production at all times.



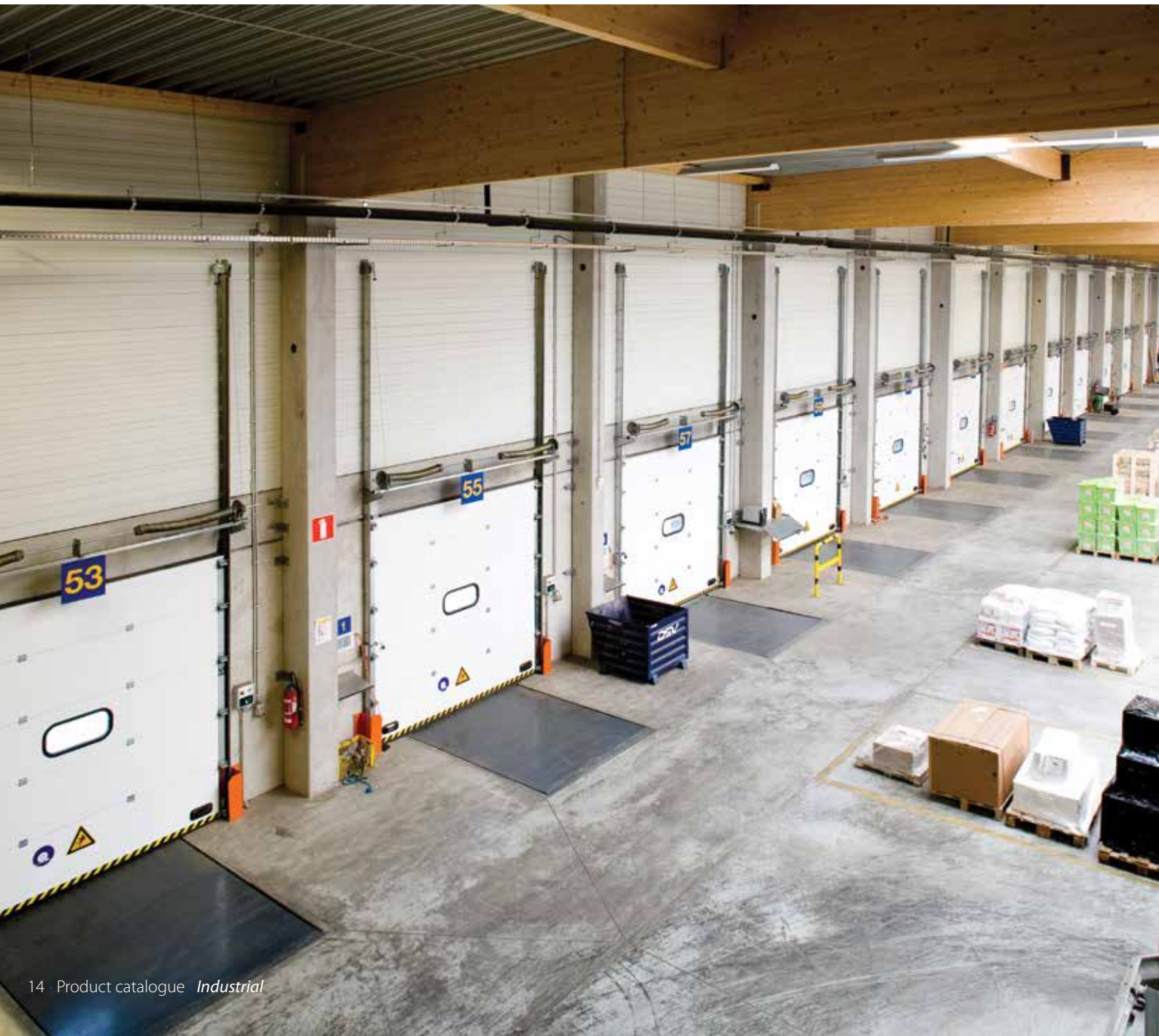
pro line | by l-door

Sectional doors for professional use

L-DOOR's sectional doors comply with the strictest European guidelines in the areas of safety and sustainability. In order to be able to guarantee this quality, all of our sectional doors comply with the European requirements set by the European Commission in standard EN13241-1. All of our sectional doors also exceed the requirements set down in the CE-NEN standard norm and comply fully with the requirements of the

Construction Products Directive 89/106/EC. If you opt for an automated sectional door from L-DOOR, you can be sure that it complies with the requirements of the following supplementary European directives:

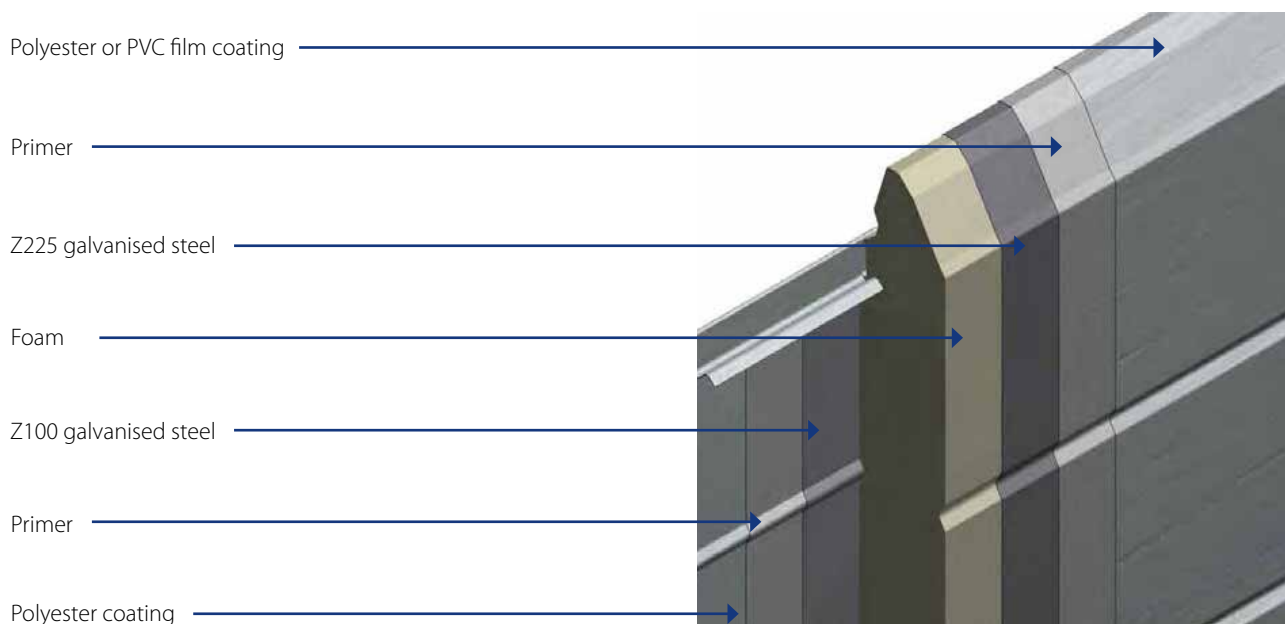
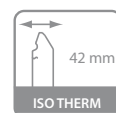
- Machinery Directive 98/37/EC;
- EMC Directive 89/336/EC and its subsequent amendments;
- Low-Voltage Directive 73/23/EC and its subsequent amendments.



The insulation value is an important feature

The insulation of your sectional garage door is an important feature. L-DOOR always provides you with steel sandwich panels, filled with polyurethane foam at least 42 mm thick. An 80 mm door leaf is also an option. This not only benefits the durability and strength of your door, but also guarantees a high

insulation value – a factor that can also generate significant savings on your energy costs. Rubber sealing strips between the panels, on the sides, top and base of your door ensure that the cold and moisture are kept out. An L-DOOR sandwich panel is always of 'monocoque' construction.



Finger guards

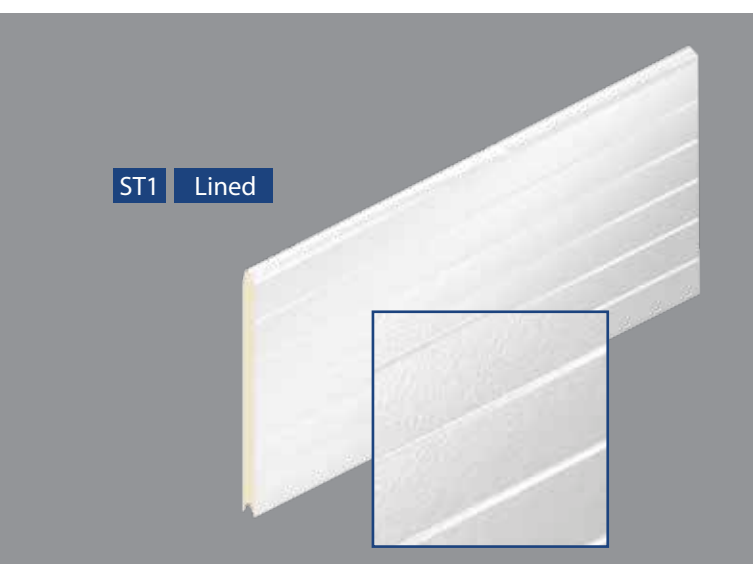
Your sectional door is always built with sandwich panels complete with finger guards (except 80 mm). As a result, your fingers cannot become jammed when operating the door. Finger guards are mandatory under the law up to a height of 2500 mm (tipping point top section) under CE standards.



The standard in **panel variants**

The first step in choosing your sectional door is the selection of a panel variant. L-DOOR offers you 2 standard variants, although you can choose optionally from more than 15 types. Your personal adviser will help and guide you in this area. An L-DOOR panel is of 'monocoque' construction and the panel seal

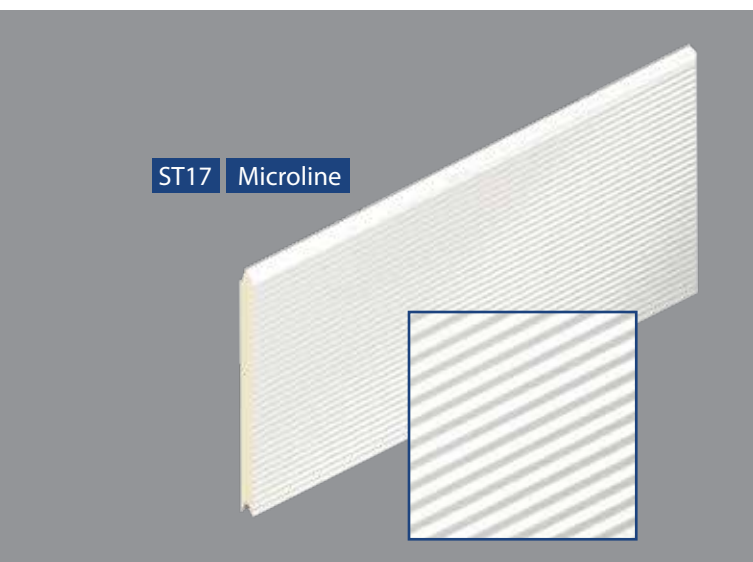
is placed at the bottom. The advantage of positioning it here is that it only undergoes compression, in comparison with other seals, which are positioned at the top of conventional panels, meaning that they are also subject to friction and can become loose.



Standard colour:



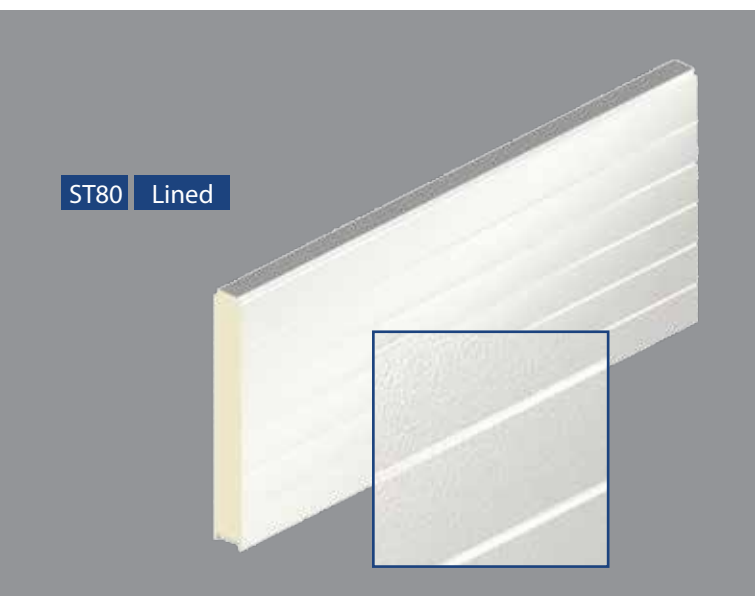
As an option, the leaf of your door can be painted in the colour of your choice.



Standard colour:



As an option, the leaf of your door can be painted in the colour of your choice.



Standard colour:



Ral 9002

As an option, the leaf of your door can be painted in the colour of your choice.

Rail systems, suitable for every situation

The rail system of your sectional door consists of the horizontal and vertical rails between which the leaf of the door moves. L-DOOR offers you a wide range of different systems. Your personal adviser will work with you to decide which system is the most suitable for the situation on site.

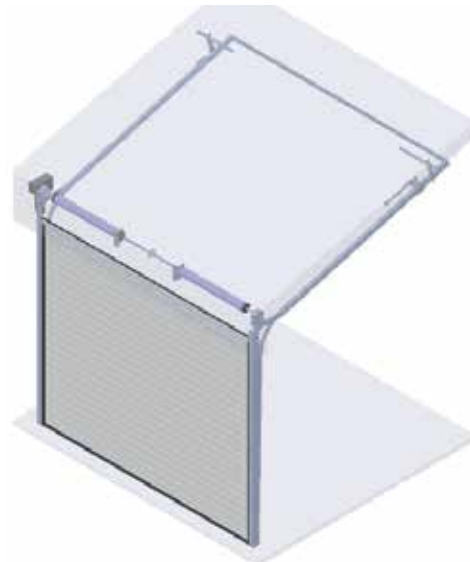


You will find the technical information you need for each hardware system from page 68 of this catalogue onwards.

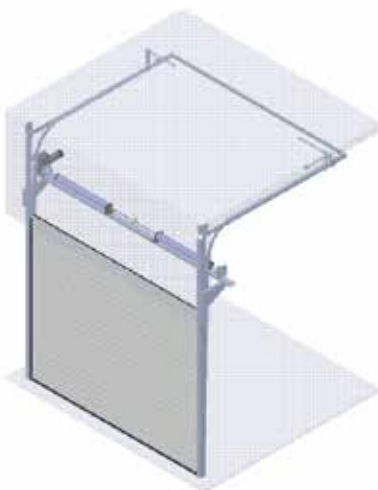
Normal Ceiling System



Normal Ceiling System following the roofline



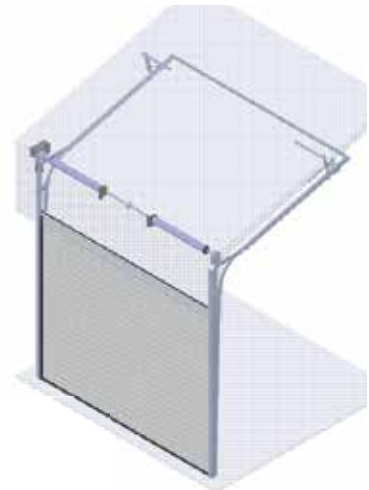
High Lift Dock System



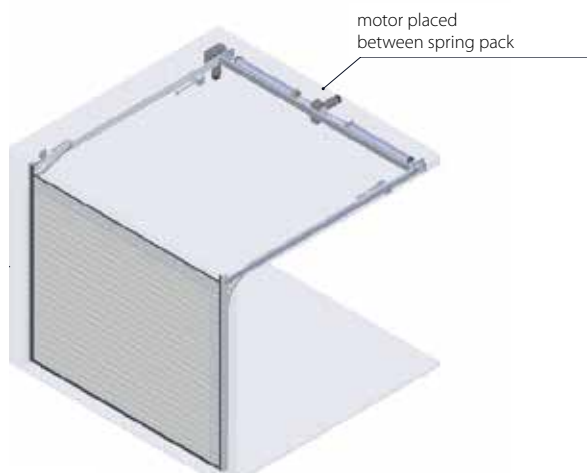
High Lift System



High Lift System following the roofline



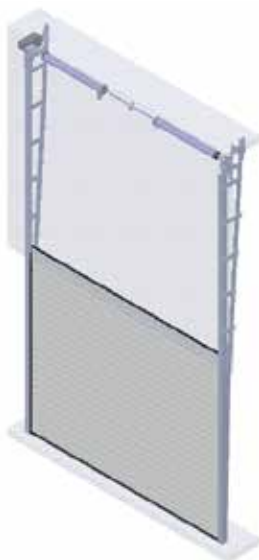
Low Ceiling System



Low Ceiling System following the roofline



Vertical Lift System



Vertical Lift Dock System



Flexible **seals** for maximum insulation



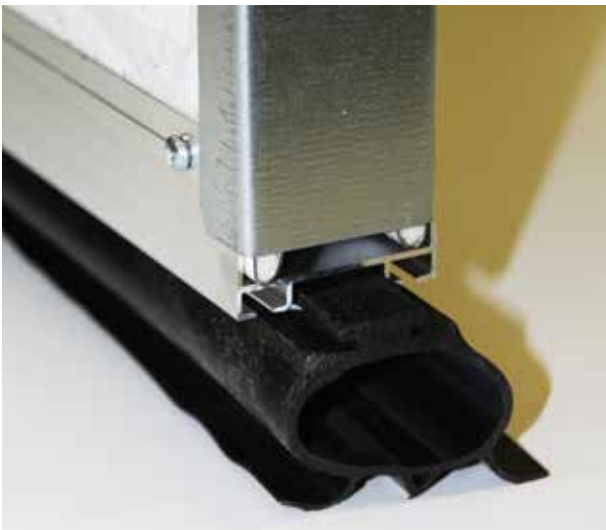
Rubber upper seal

The rubber upper seal is manufactured from EPDM and is slid into the aluminium top profile that finishes the top section, depending on the headroom. This ensures that the top of your door is sealed to perfection.



Rubber side seals

To the left and right, your sectional door is fitted with side seals, which are secured to the vertical diagonal profiles. These side seals consist on the one hand of a rigid section, manufactured from PVC and regenerated materials, and a flexible section made from elastomeric TPE on the other. The latter material is noted for its ability always to revert to its original shape.



Rubber bottom seal

The rubber bottom seal, manufactured from EPDM, is slid into the aluminium bottom profile that finishes the bottom section of the bottom panel. This is what makes your door waterproof and windproof. The bottom seal of a sectional door invariably has an air chamber, so that doors can always be automated, if required.

Torsion springs with a 40% **extended lifetime**

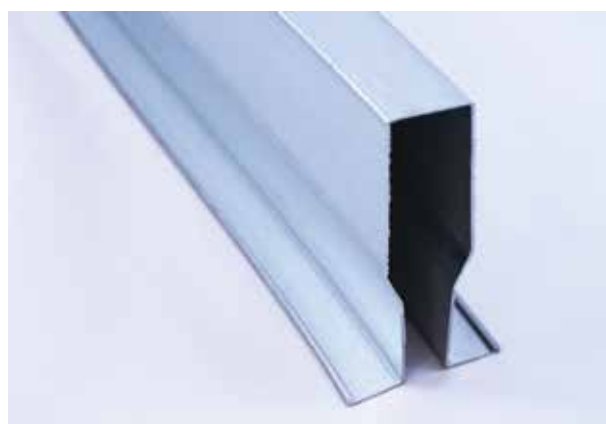
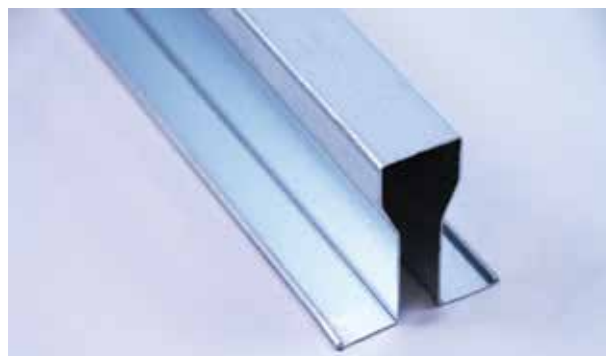
Every sectional door must always be counterbalanced whether it is automated or not. All of our torsion springs are custom-made, to suit the dimensions and weight of the sectional door. Torsion springs ensure that the door leaf is always perfectly counterbalanced. Depending on the type of rail system, we also adjust the cable drums.

Our torsion springs invariably come with a steel barrel arbour with matching bearing-mounted plates. Optionally, we can also supply you with higher-cycle torsion springs instead of the standard 25,000-cycle torsion springs. For intensive use, L-DOOR recommends more heavy-duty torsion springs capable of accommodating 50,000 or 100,000 cycles. All L-DOOR torsion springs come in a powder-coated finish, as this extends their lifespan by at least 40%.



Strengthening profile

Wide sectional doors are fitted with strengthening profiles on the inside of one or more panels, depending on the clear width and the options chosen. Strengthening profiles prevent the door from bending as a result of very high winds or, when open, on account of the weight of the door leaf itself. The available heights are 68 mm and 110 mm.



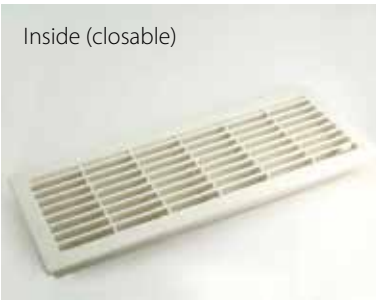
Ventilation grilles

In some buildings, a certain volume of free airflow must be provided to ensure a supply of fresh air. Ventilation grilles are available in 2 finishes: a standard, closable plastic grille and a fully bespoke aluminium grille.

Outside



Inside (closable)



Plastic ventilation grille

Standard ventilation grille white RAL 9016
Plastic, closable 344 x 138 mm
Net free airflow 155 cm²



Aluminium ventilation grille

Made from AlMgSi 0.5 aluminium profiles (as per EN 12020-2).
Grilles can be supplied in an anodised (20 micron) finish or can be painted in any of the RAL colours and fitted with a back and front frame.

Visual free airflow: 59%
Physical free airflow: 45%
Net free airflow on request, based on dimensions

Additional natural light with viewing panels

To create more natural light, your sectional door can be fitted with one or more viewing panels, regardless of the panel type chosen. To guarantee the stability of your sectional door, a viewing panel is not possible in the bottom panel. The number of viewing panels per section will depend on the clear width. Please bear in mind that these plastic viewing panels cannot be painted.

Rectangular viewing panel

Dimensions (w x h): 680 x 373 mm

Assembly: snap-on connection

Glazing: 2 or 3 mm acrylate

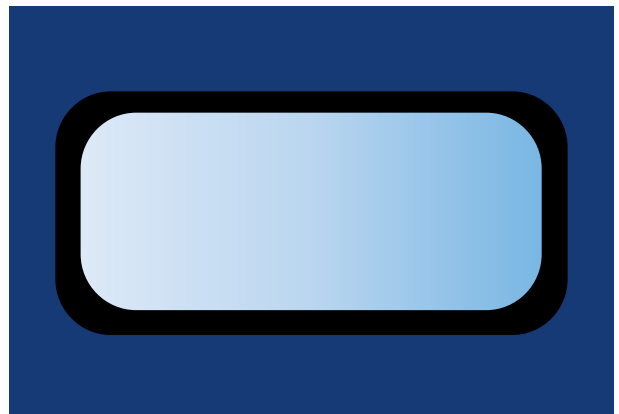


Oval viewing panel

Dimensions (w x h): 663 x 343 mm with a corner radius of 131 mm

Assembly: snap-on connection

Glazing: 2 or 3 mm acrylate



Viewing panels



Personalise your door sections

Your door can be fitted with one or more glazed sections. This allows you to make the most of the natural light. Glazed sections are fitted across the entire width of your sectional door. These sections are fitted with finger guards. You could also opt for expanded metal if you wish.

Glazed sections combined with insulated finger guard protected panels.

The glazed sections can be fitted with:

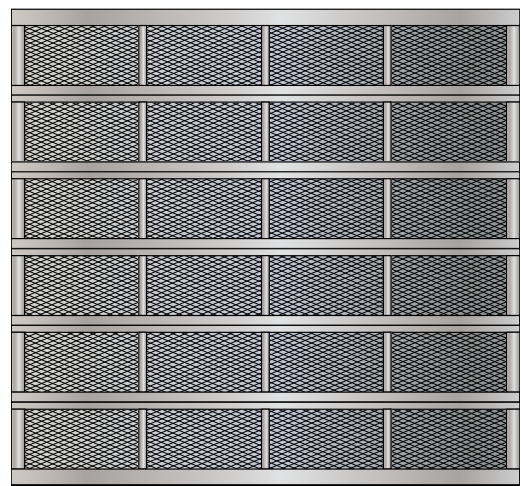
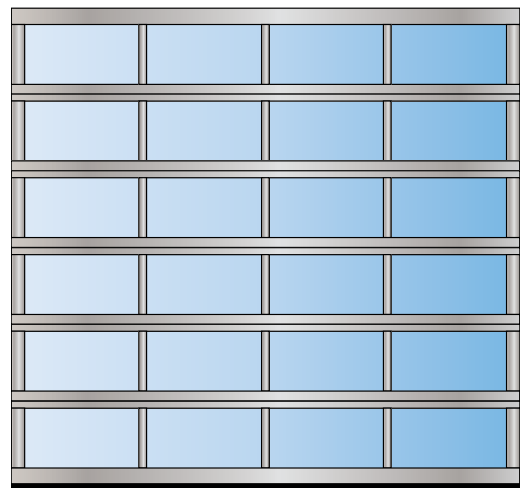
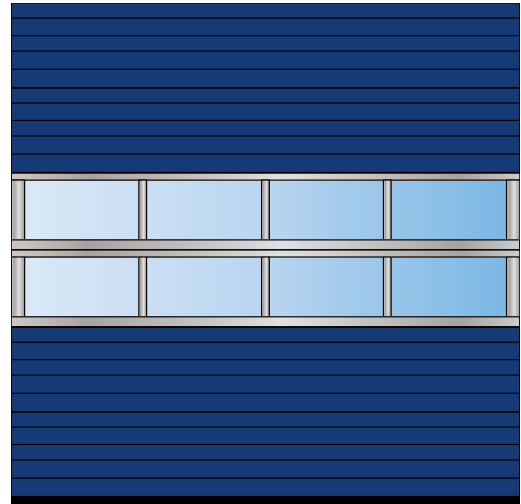
- Double acrylate
- Triple acrylate
- Double polycarbonate
- Double Protec glazing with added scratch-resistant properties

L-DOOR integrates the glazing beads into the design so that your sectional door will open even more quietly. The horizontal auxiliary frames have been made slimmer to enhance the overall aesthetics of the door. Another advantage of this slim design is that the incidence of light increases significantly. The profile shells are 1.8 mm thick.

This sectional door consists of glazed sections only, for maximum natural light.

Sectional door built from aluminium sections, fitted with expanded aluminium. This particular design comes with the following standard properties:

- Mesh gauge 18.7 x 7.7 mm
- Natural aluminium colour
- Secured in anodised aluminium frames to make the door even more burglar-proof.

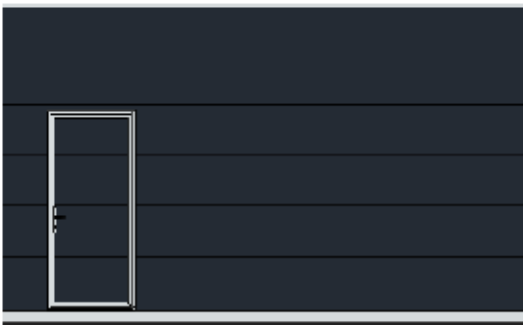




Built-in wicket door

Your sectional door can be fitted with a left or right-hand opening wicket door. Wicket doors always open outwards to guarantee safety when in a horizontal position. This ensures that the wicket door can never simply fall open. If you intend to use the wicket door as an emergency exit, it is imperative that the door opens outwards. L-DOOR fits your wicket door with a doorstep of 180 mm as standard but, depending on the width,

you can always opt for a lower doorstep. If you have decided on an automated sectional door, L-DOOR will fit your door with a safety switch as standard as this will prevent anyone operating the sectional door when the wicket door is not shut. As an extra safety feature we invariably fit a door pump to prevent that the wicket door inadvertently remains open at an angle that is not quite 90°.



Outward opening, hinge position: left
(internal view)



Outward opening, hinge position: right
(internal view)



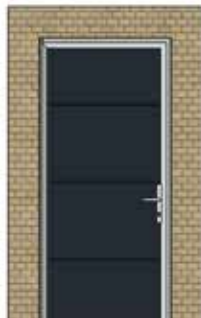
Fixed front door

A fixed front is a door composed of door panels with aluminium finishing profiles around that can be painted if required. Fixed fronts can be made from the same door panels as the sectional door and are painted in the same RAL colour. If required, the fixed front can be used as an escape door by fitting it with a push bar or panic lock. We can supply you with a left-hand or right-hand opening fixed front that opens inwards or outwards

to suit your requirements. Fixed fronts are a highly energy-friendly solution as they keep the loss of heat and/or cold to a minimum.



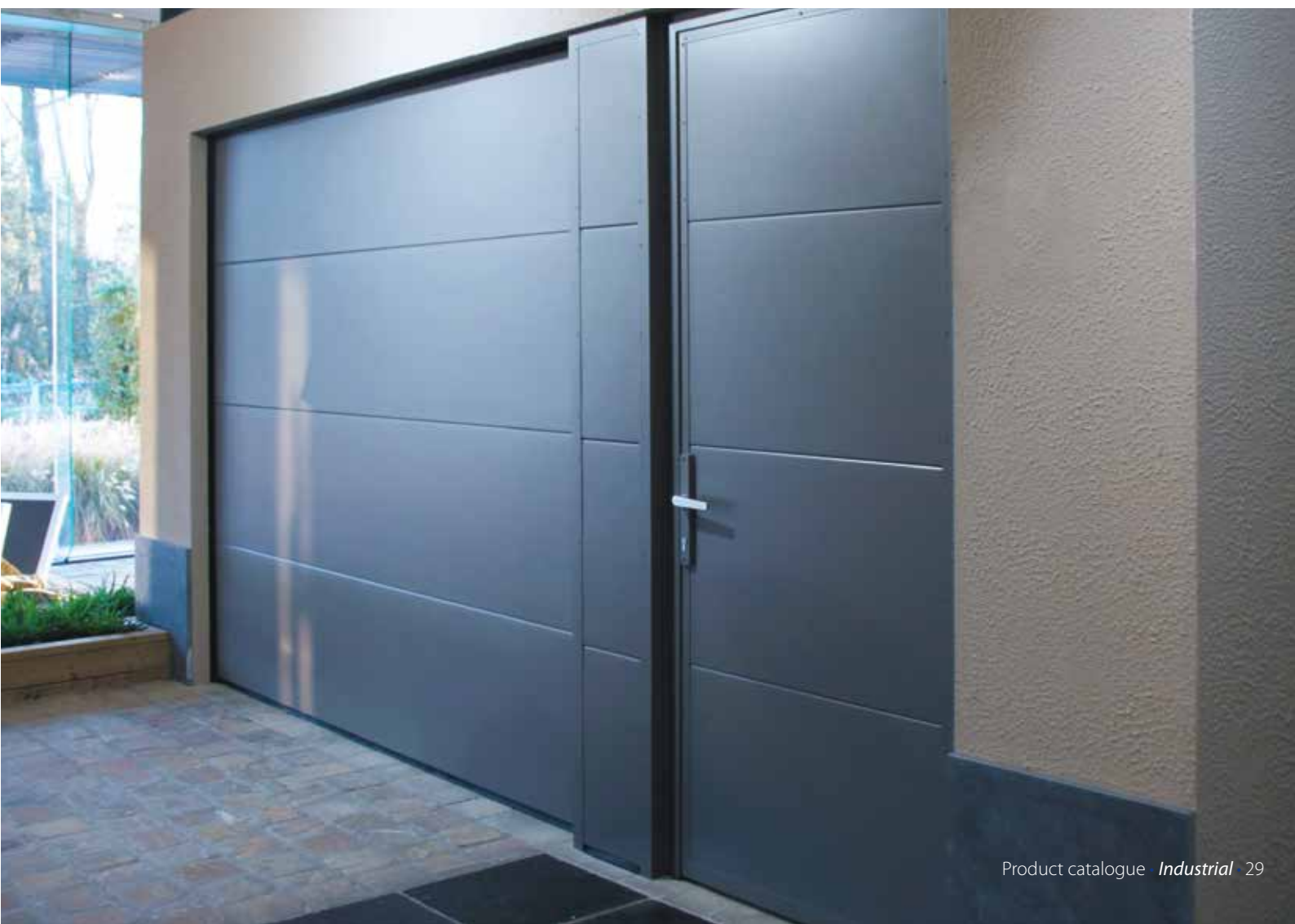
Outward opening,
hinge position: left.
(internal view)



Outward opening,
hinge position: right.
(internal view)



Your wicket door can be fitted with a panic bar.



Manual operation

Pull-rope system

Your sectional door can be operated manually by means of a rope system. You can open or close the door using the pull-rope, guiding it along its track. Frequency of use and weather conditions can affect the proper functioning of the sectional door. For that reason, it is important that you have it inspected and serviced by qualified engineers at regular intervals.



Chain-hoist system

You also have the option of operating your sectional door by means of a chain-hoist. By pulling the chain the door will open or close. The chain-hoists uses a gear unit linked to an axle. As soon as you stop pulling the chain the door leaf will come to a halt, whether it is in the process of opening or closing. While operating the door, it is important to keep hold of the chain as the steel hoisting cables could otherwise slip out of the cable drums.



Handle/foot pedal

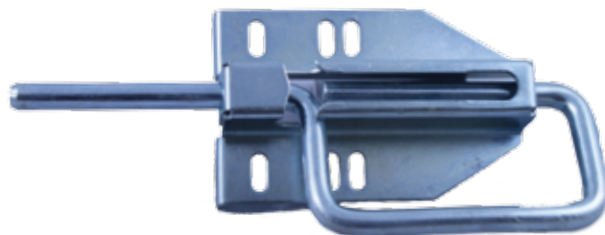
To make your manually operated sectional garage door easier to open, a built-in handle is provided. This handle can be used both from the inside and the outside. With an automated door, handles can be fitted as an optional extra.



With manual operation of your sectional garage door, you can opt to have it lock from the outside and/or inside. L-DOOR offers you a range of options for this.

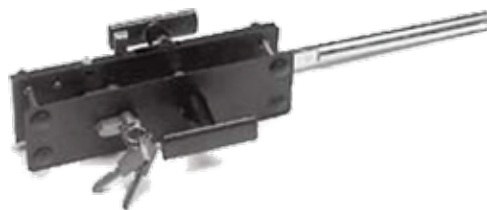
Sliding bolt

A cylinder-less sliding bolt can only be operated from the inside. This type of bolt is used mainly in situations where a sectional door is not your only means of access. The sliding bolt is not visible from the outside.



Cylinder lock

A cylinder lock can be operated from both inside and out. From the inside, no key is required; simply turn the handle 90° and press in the unlocking catch simultaneously. From the outside the cylinder lock can only be operated by means of the key and by turning the handle through 90°.



Snapper lock

This lock guarantees that your door is always in the locked position.



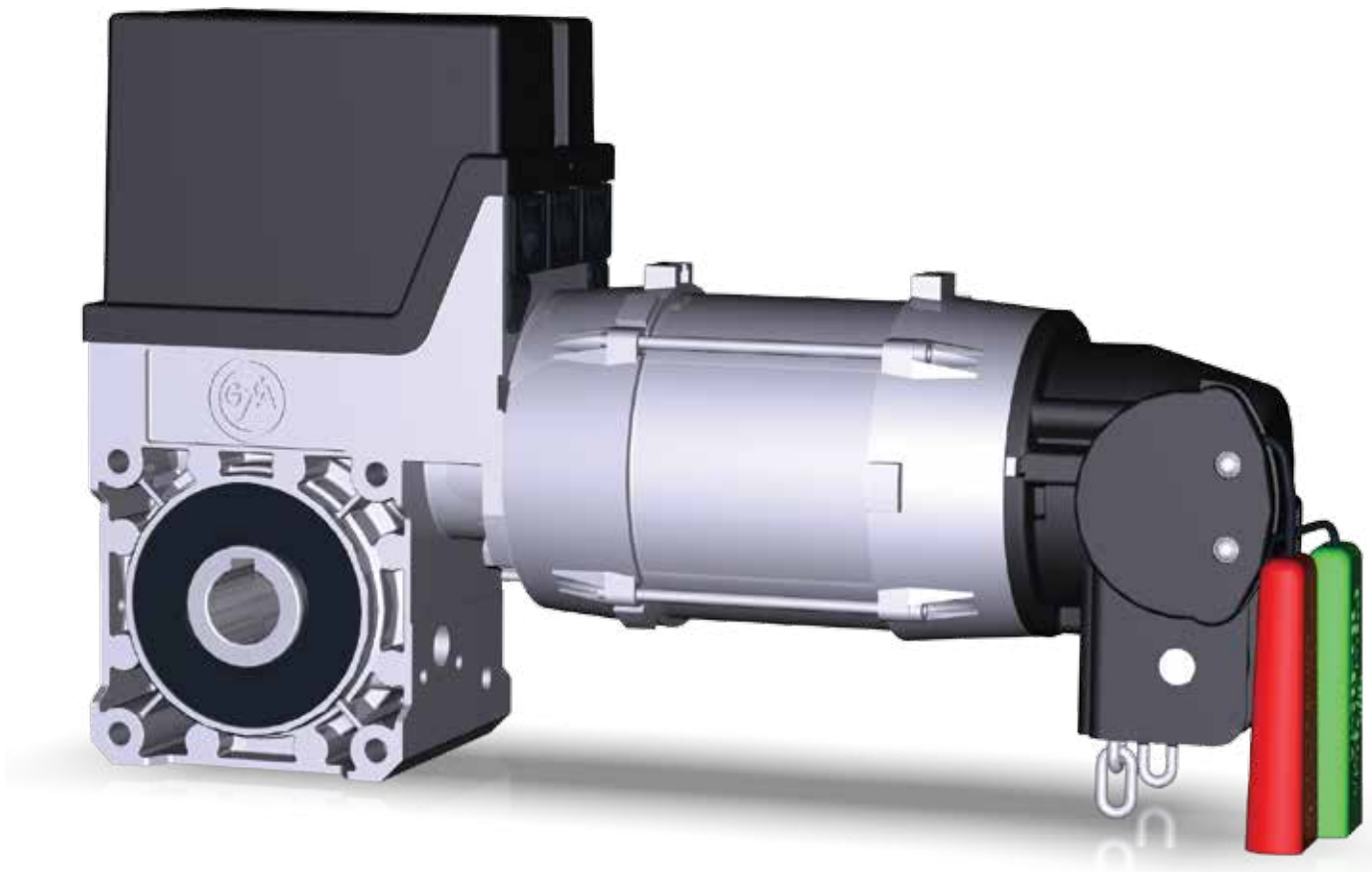
Electric operation

Electromotor with control unit

If you opt for an automated door, L-DOOR will fit your sectional door with an electromotor. The area of the door leaf and frequency of use determines what type is the most suitable. The electromotor is operated by means of a control unit. Other devices can also be connected to the control unit if you wish. The electromotor directly drives the barrel arbour above, winding the hoisting cables up or down and moving the door leaf along with it.

L-DOOR offers you control unit TS 970 as standard, but you also have the option of choosing a model that comes with even more functionalities, the TS 981. The control unit is fitted with integrated up/stop/down controls. Also, the standard unit has been designed to accommodate various other terminals. Both control units come with the necessary safety features.

You will find the technical information you need about the electromotors from page 78 of this catalogue onwards.





| Extended electric operation



Pull switch



Key switch



Remote control
(combined with external receiver)
Available in several variants



Wireless keypad
(combined with external receiver or with
electronical connection to the motor)



Radar control



Traffic lights
With location or right of way indication



Time relay



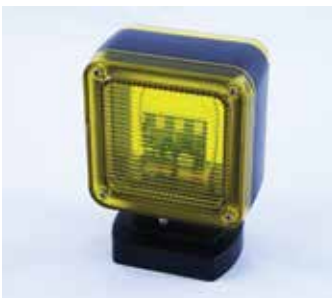
- Photo cell reflector
- Photo cell z/o



Pushbutton unit UP-STOP-DOWN



Inductive loop controller



Flashing light



Emergency stop

Spring break safety device



The torsion springs keep your sectional door perfectly balanced. If one of the torsion springs was to lose tension or break, this feature ensures that the sectional door comes to an immediate halt when in the process of closing.

Our type 670LH/RH spring break safety devices carry BG (Berufs Genossenschaft 'Bauliche Einrichtungen', Bonn, Germany) approval number 94073 and have been extensively tested by TÜV (Technische Überwachungsverein, Munich, Germany). As a result, these safety features more than amply satisfy European Standard EN12604 (mechanical requirements). Model 675LH/RH-5/4 carries BG approval number 98098.



Cable break safety device



A cable break safety device is not fitted as standard to sectional doors. However, in the case of oversized steel hoisting cables with safety turns on the grooved aluminium cable drums, a set of cable break devices can offer additional safety. This feature will prevent the sectional door falling if a cable were to break. If the sectional door is automated, combined with a set of cable break safety devices, a loose cable break device must also be fitted to one of the door sides. This safety feature is a breaker contact that is activated as soon as a cable breaks, bringing the motor to an immediate halt. It is an essential feature if further damage is to be avoided.

Our cable break safety devices carry BG (Berufs Genossenschaft 'Bauliche Einrichtungen', Bonn, Germany) approval number 94072 and have been tested by TÜV (Technische Überwachungsverein, Munich, Germany). Cable break device 440HD carries approval number 00023.





Obstruction sensor

Pneumatic obstruction sensor

The pneumatic obstruction sensor safety system is linked to the bottom rubber via an air duct. As soon as this air duct detects air displacement it will convert it into an electric impulse so that the control unit brings the electromotor to an immediate halt and automatically reopens the door.

There is also the option of having the bottom rubber fitted with

a photocell obstruction sensor. This safety device consists of a receiver and a transmitter fitted into the bottom rubber of your sectional door. As soon as any obstruction is detected, contact is broken, sending an electric impulse to the control unit, so that the electromotor is brought to an immediate halt and the door automatically reopens again.



An **access door**, the aesthetic solution for greater security

In underground garages and apartment buildings with a car park, L-DOOR recommends that you use an access. This closes off the outside of the building at the location where cars drive into the building. An access door provides more for residents, because it helps prevent intruders from gaining entry. It is also an aesthetically pleasing solution, because the access door has the same appearance as a sectional door for private individuals. All of the options featured in this product catalogue can be applied to your access door. For example, you can opt for a sectional door in stretched metal. This also assists with ventilating the garage or building. To ensure the safety of cars driving in and out, you can opt for a traffic light (with right of way indication, if required). Depending on the number of users, L-DOOR will

provide the required number of transmitters, all programmed for a single receiver. L-DOOR access doors are designed for intensive use, with the springs guaranteed to operate properly for 100,000 cycles. And as with all of our doors, they operate with super-secure German motors from GFA.

You can always rely on a project-focused approach for every access door. That's because every building is different and users often have different requirements. If you require, L-DOOR will attend site meetings during your build process. You can rely on us as your sole supplier for the sale, survey, site meetings, production and installation. In a word, we are your one-stop shop. And don't forget, we offer you service 24 hours a day, 7 days a week.





The right loading equipment for every logistical application

Straightforward, fast and functional. An L-DOOR loading bridge is without doubt the perfect solution for every loading dock. Thanks to its hydraulic swing mechanism, the dock leveller can easily span the height difference between the loading dock and your lorries. Our loading bridges are made up of three sections:

- A platform with an upper sheet made from a tread plate 6-8 mm thick, reinforced with laminated profiles to provide the required dynamic strength (6 to 15 tons).
 - A lip made from a sheet of tread plate 13-15 mm thick. The edge of the lip is bevelled to ensure smooth transition between the loading bridge and the loading platform.
 - And the substructure, made from laminated profiles to which the platform and hydraulic motor are fitted.
- An emergency stop that is activated by a section switch or zero-voltage switch.
 - A non-return valve in the hydraulic cylinder.
 - Fixed and moving side panels that acts as foot guards.
 - A platform with an upper sheet made from nonslip tread plate.
 - Warning signs in the form of stickers on moving parts.
 - A safety brace to prevent the leveller from closing during maintenance works.

Safety is an essential requirement for every professional. For that reason all L-DOOR levellers are equipped with a range of safety systems:

The concept of the L-DOOR construction system is straightforward: our systems are designed to cater for everyone's needs. Ask your adviser for a customised technical drawing, with no obligation. There are three different types of loading bridges, which all come with their own specific construction method.



Installation type

Loading equipment is installed some 2 weeks after the concrete floor has been poured to give the concrete a chance to cure properly. The pit can be designed with or without a 'letterbox', which is the clear space underneath the loading bridge, so that lorries equipped with their own loading platform can also use the loading bridge.

Without letterbox

The contractor supplies permanent shuttering and creates a pit with sides that are reinforced with a steel angle profile and a conduit for electrical cables.

With letterbox

L-DOOR supplies permanent shuttering with the appropriate reinforcement and weight-bearing structures for the loading

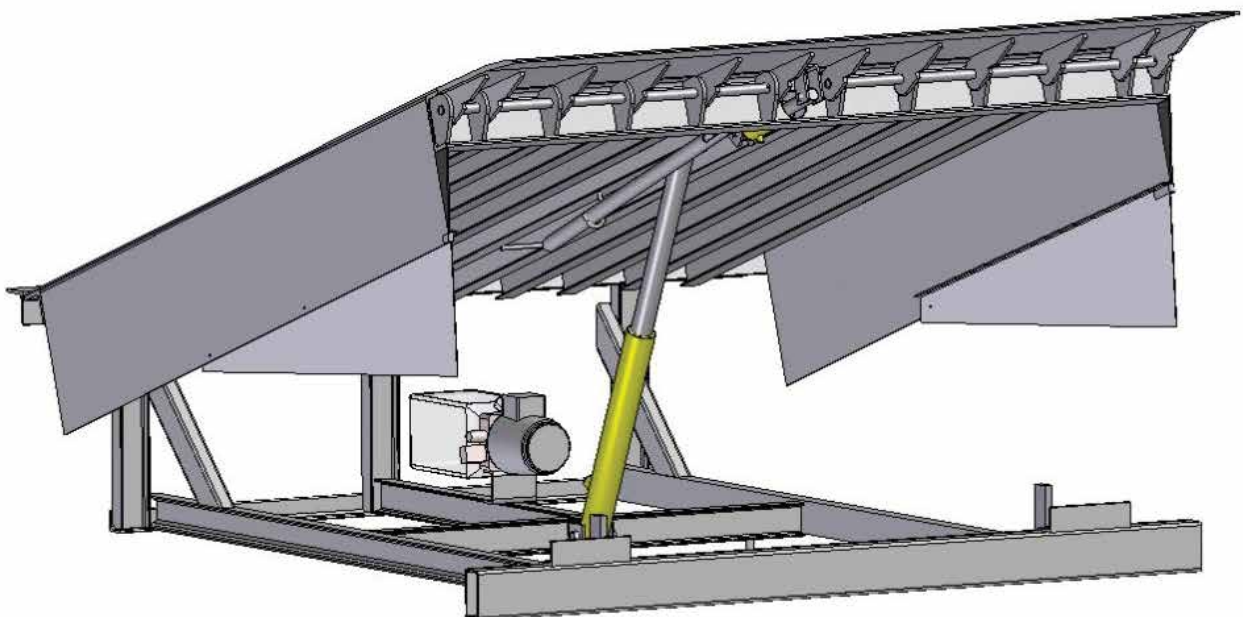
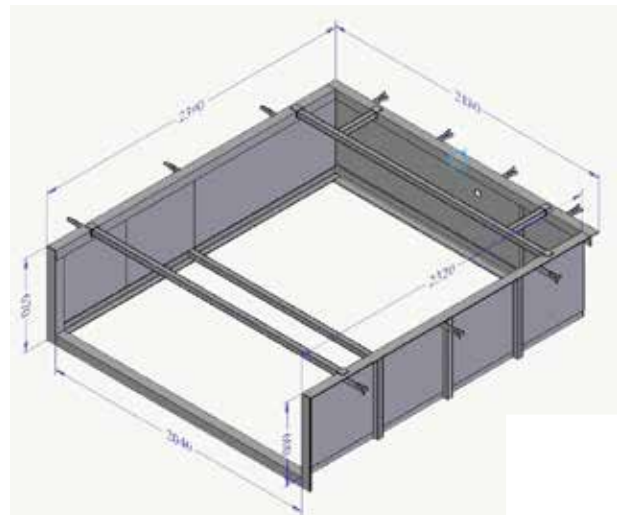
bridge in the dimensions of your choice.

This type of loading bridge is welded to the formwork at the rear once the concrete floor has hardened. The advantage of this method is that the loading bridge cannot be damaged when the concrete floor is being poured. And the loading bridge is simple to replace or relocate.

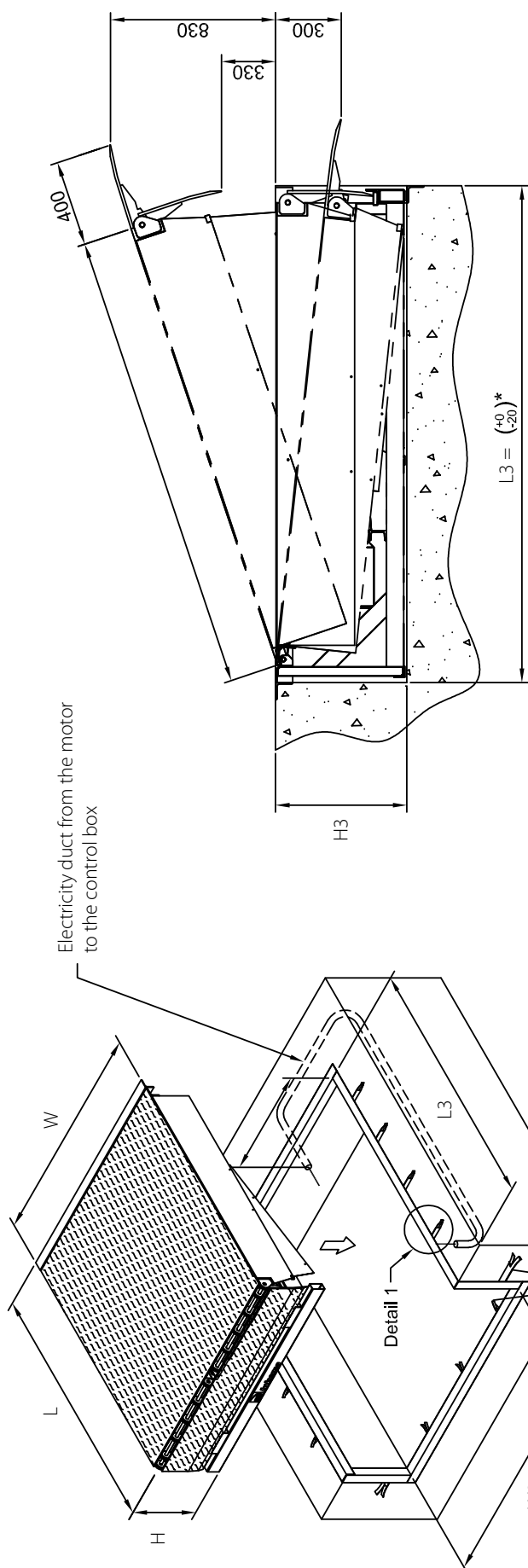
Renovation

This type of loading bridge is also mainly used during renovation works. The old loading bridge is hauled out of the existing pit and replaced by this type, with or without connecting profiles or telescopic feet.

L-DOOR can always supply a customised loading bridge for any existing pit size, even at very short notice.



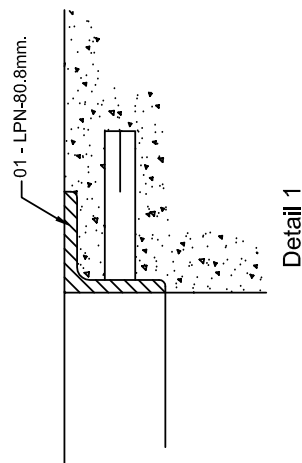
Installation type without letterbox



Electricity duct from the motor to the control box

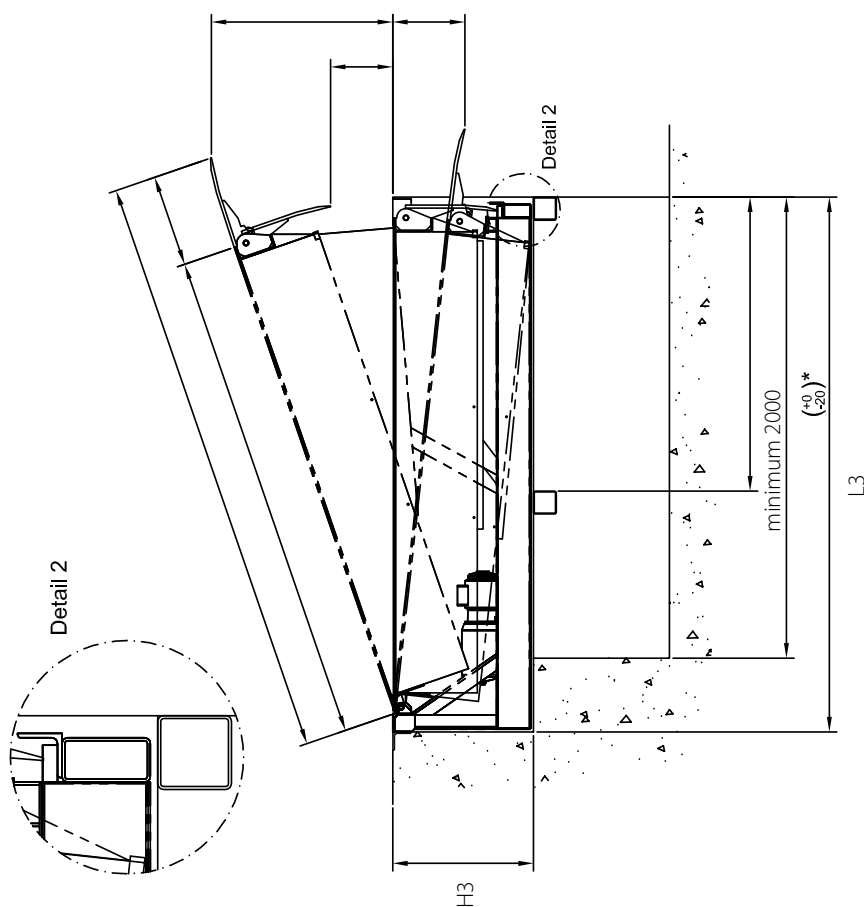
Shuttering with framework supplied by the contractor

| Standard dimensions | | |
|------------------------|------------------------|----------------------|
| L3 = length of pit | W3 = width of pit | H3 = height of pit |
| L3 = 2080 for L = 2000 | W3 = 1840 for W = 1800 | H3 = 610 for H = 600 |
| L3 = 2320 for L = 2300 | W3 = 2040 for W = 2000 | |
| L3 = 2580 for L = 2580 | W3 = 2240 for W = 2200 | |
| L3 = 3080 for L = 3000 | | |



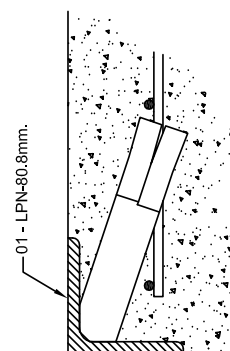
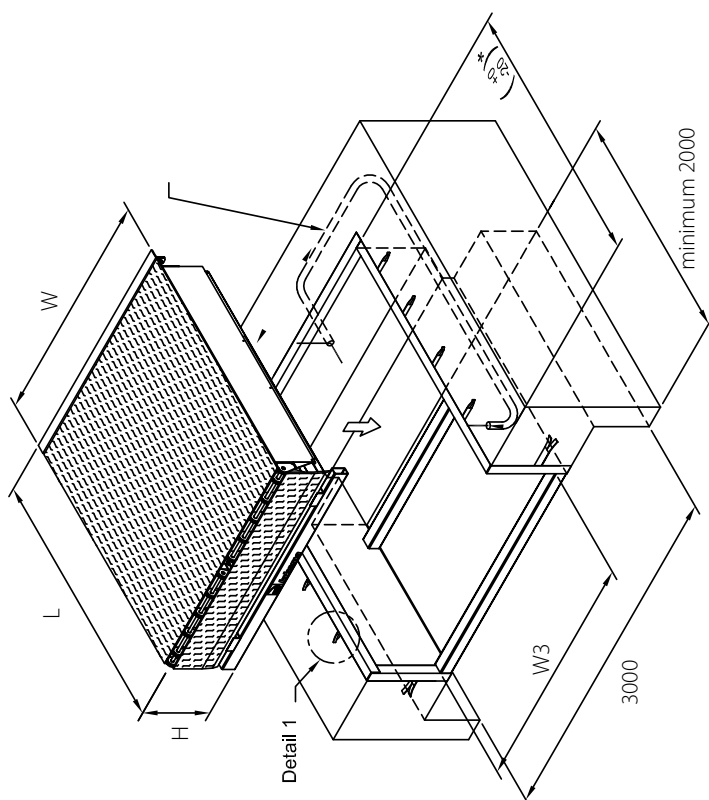
Detail 1

Installation type with letterbox/shuttering



Standard dimensions

| L3 = length of pit | W3 = width of pit | H3 = height of pit |
|------------------------|------------------------|----------------------|
| L3 = 2080 for L = 2000 | W3 = 1840 for W = 1800 | H3 = 610 for H = 600 |
| L3 = 2320 for L = 2300 | W3 = 2040 for W = 2000 | |
| L3 = 2580 for L = 2580 | W3 = 2240 for W = 2200 | |
| L3 = 3080 for L = 3000 | | |



Shuttering supplied by L-DOOR with the appropriate weight-bearing structure for the loading bridge selected by you.

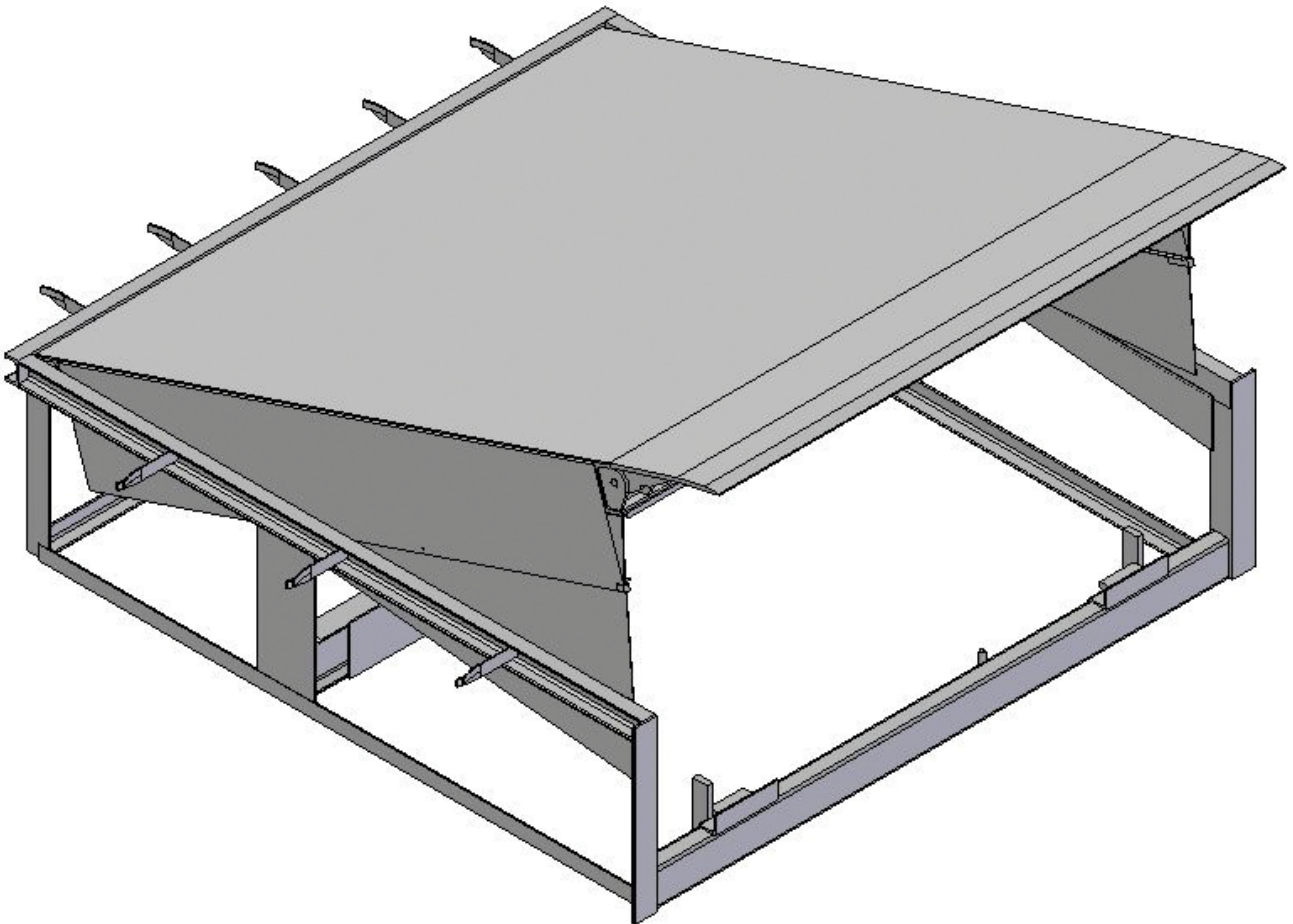
Self-supporting type

Self-supporting loading bridges are installed before the concrete floor is poured. This pit always comes with a letterbox. The loading bridge is suspended, without supporting structure, in the concrete floor.

The builder installs the concrete plinth and provides a rear wall. The loading bridge is then suspended by L-DOOR between the plinth and the rear wall.

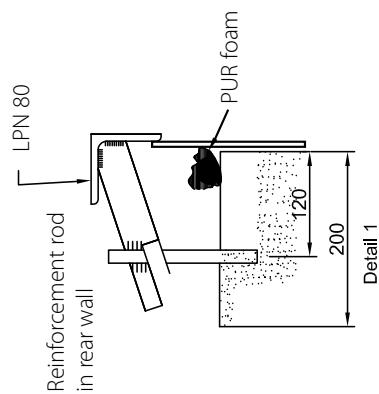
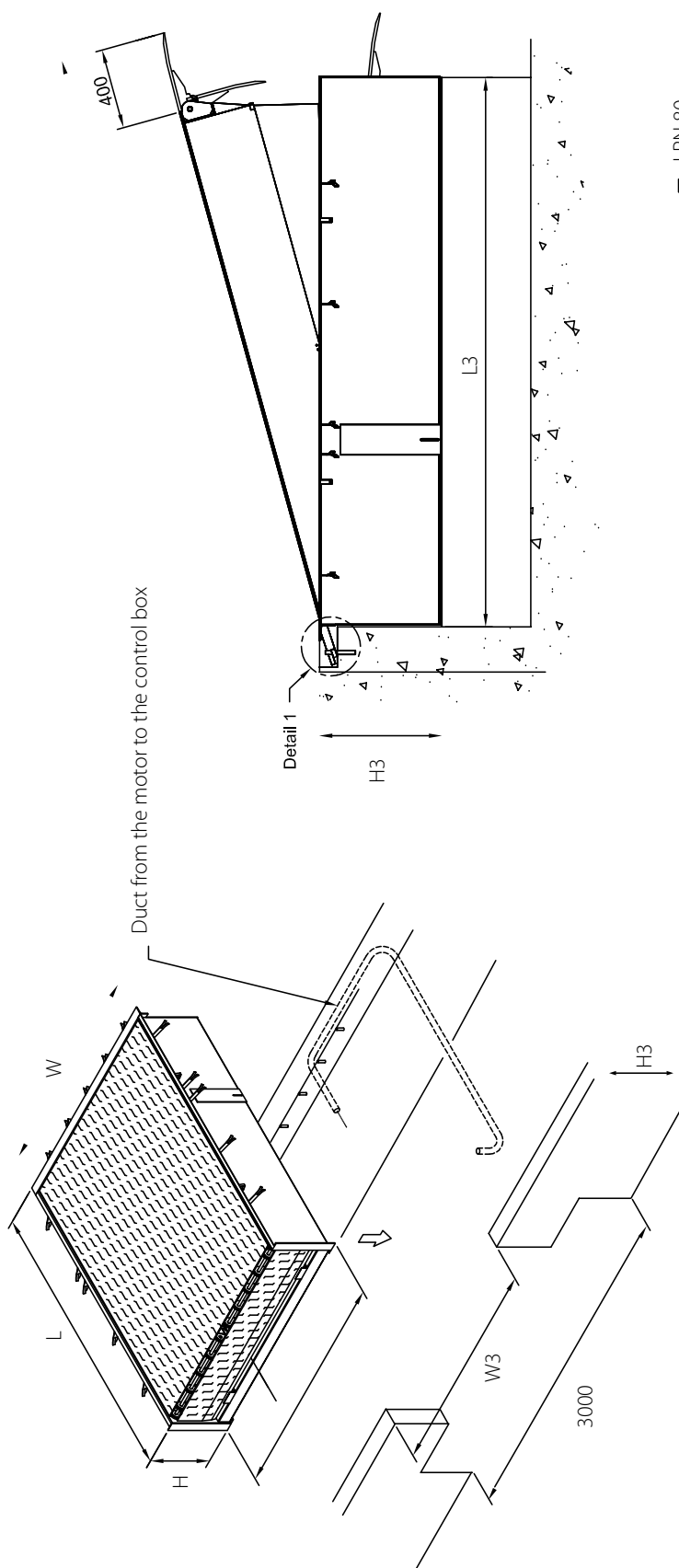
Once it is completely level, it is welded to the reinforcement

of the rear wall. The sides of the pit are then sealed with prefabricated concrete slabs. Any cracks are sealed with PUR foam. The loading bridge is ready and the concrete floor can now be poured. The loading bridge, complete with its anti-collapse frame and docks, is suspended securely into the concrete floor. Self-bearing loading bridges are mainly fitted in logistics buildings where there are several loading docks in one line.

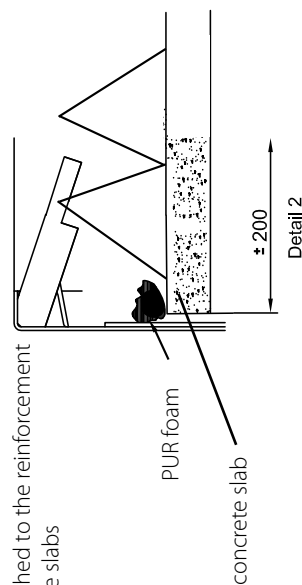




Self-supporting type



Lugs attached to the reinforcement of the concrete slabs



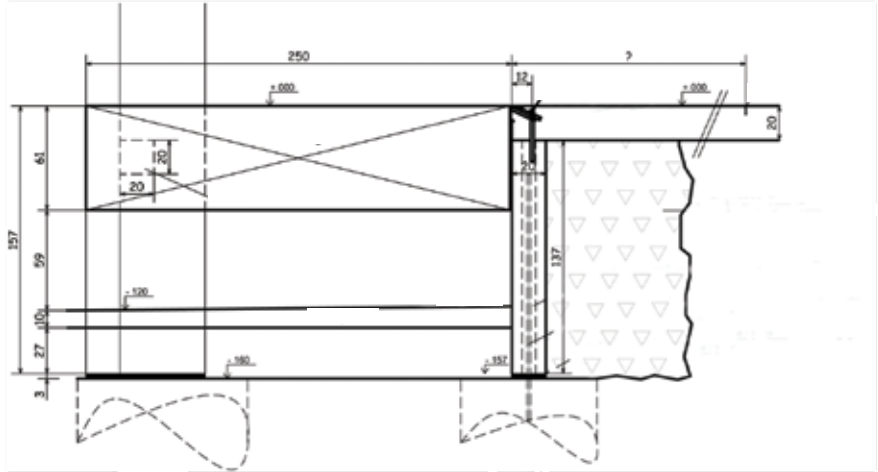
Standard dimensions

| L3 = length of pit | W3 = width between the plinths | H3 = height of plinth |
|------------------------|--------------------------------|-----------------------|
| L3 = 1990 for L = 2000 | W3 = 1880 for W = 1800 | H3 = 610 for H = 600 |
| L3 = 2230 for L = 2300 | W3 = 2080 for W = 2000 | |
| L3 = 2490 for L = 2500 | W3 = 2280 for W = 2200 | |
| L3 = 2990 for L = 3000 | | |

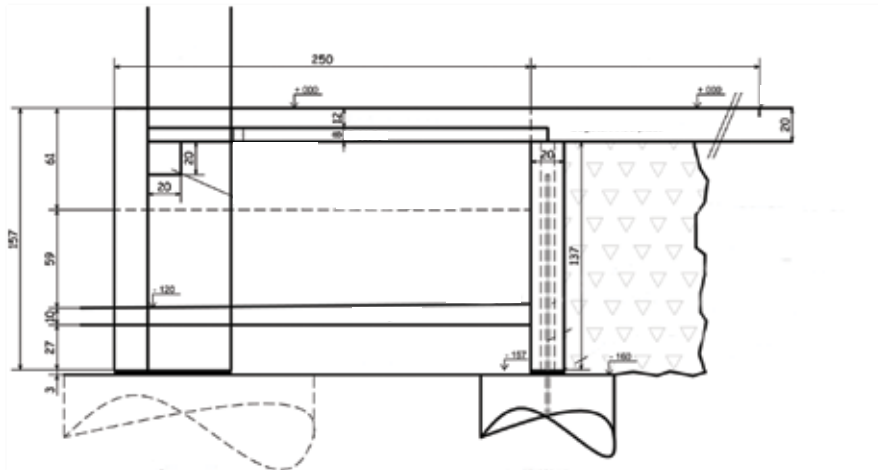
Pit for **self-supporting** loading bridge

(2500x2000mm)

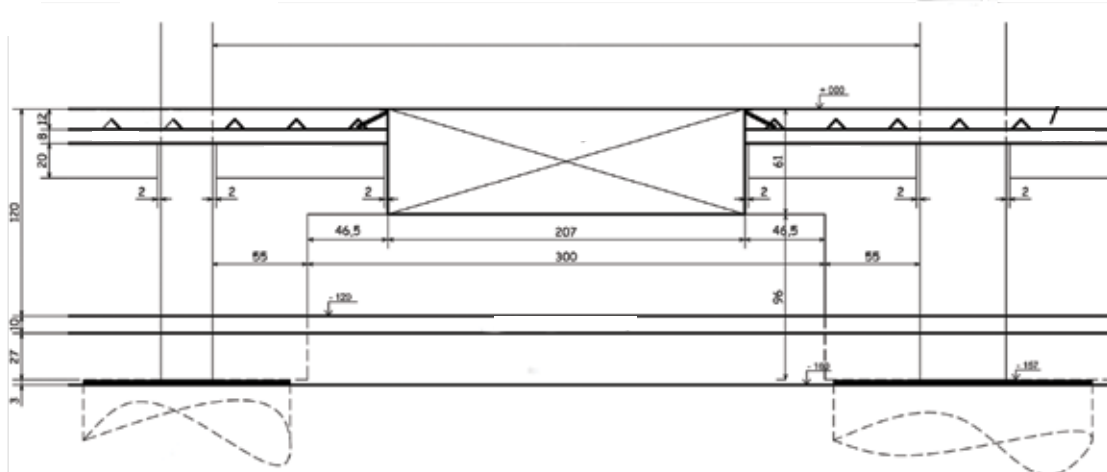
Cross-section A



Cross-section B



Cross-section C



Box type

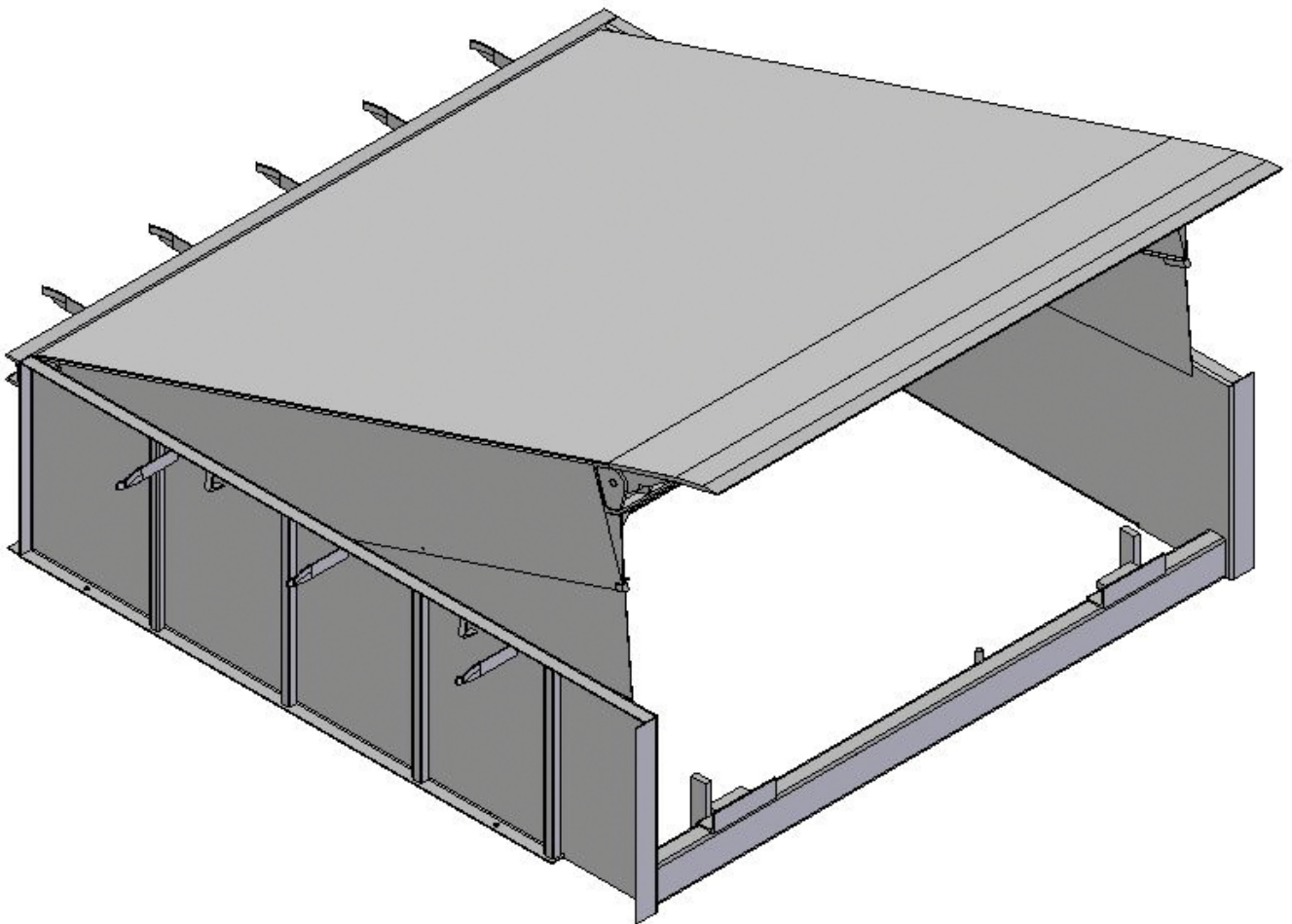
Box-type loading bridges are installed before the concrete floor is poured. This model usually has a letterbox, but can also be supplied without. This loading bridge has permanent shuttering all around and is secured to a concrete slab, which seals the letterbox.

The contractor provides a letterbox behind the plinth. This can be constructed, poured or made from prefabricated slabs. Once finished, it is covered with a sturdy concrete slab of +/- 200 mm. The box model is placed on top of this structure, the conduit for

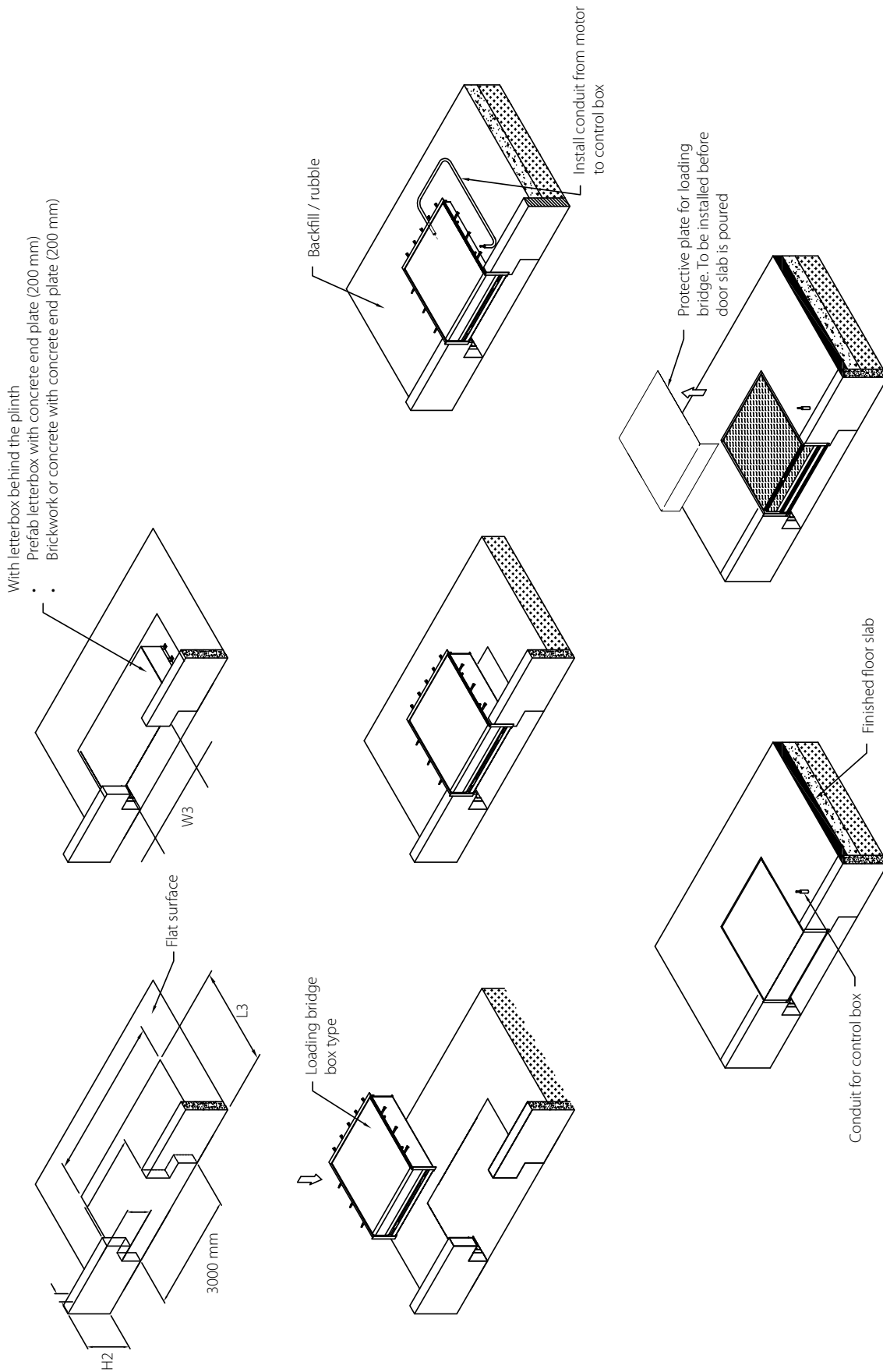
the electrical cables is put in place, the area is filled with soil or rubble and then the concrete floor can be poured.

Advantages

The advantage of this type of loading bridge is that it is easy to install and requires little civil engineering work. Because this type of loading bridge is secured to a concrete slab, the free flow of air is limited.



Box type



Standard dimensions

L3 = length of pit

- L3 = 2000 for L = 2000
- L3 = 2300 for L = 2300
- L3 = 2500 for L = 2500
- L3 = 3000 for L = 3000

W3 = width between the plinths

- W3 = 1880 for W = 1800
- W3 = 2080 for W = 2000
- W3 = 2280 for W = 2200

H2 = Height of loading bridge + thickness of end plate

Dock leveller with **telescopic lip**

With their functionality and efficiency, L-DOOR loading bridges with telescopic lip are the best choice. The loading bridge is equipped with a telescopic lip of 500 mm or 1000 mm. They are particularly well suited for facilities where internal and external heat insulation is important.

Telescopic loading bridges are equipped with:

- A platform with an upper sheet made from tread plate 8-10 mm thick and laminated profiles.
- A compact, powerful lip made from tread plate 13-15 mm thick. The lip can slide and is bevelled at the edge so that it connects perfectly with trucks.
- A supporting structure made from laminated profiles to which the platform and hydraulic motor are fitted.



Safety guidelines and standards

All of our levellers and loading bridges have been calculated and designed to comply with the following European directives and standards:

Directives

Machine Safety Directive **2006 / 42 / EC**

Electromagnetic Compatibility **2004 / 108 / EC**

Low Voltage Directive **2006 / 95 / EC**

European standards:

EN 1398:2010 Loading bridges.

EN ISO 12100-1:2010 Safety of Machinery. General standards. General design principles.

EN 61000-6-2:2006 Electromagnetic compatibility. General standards - Immunity for industrial environments.

EN 61000-6-4:2011 Electromagnetic compatibility. General standards - Immunity for industrial environments.

EN 60204-1:2010 Safety of Machinery - Electrical Equipment - General requirements.

General information

Lips

Each of these loading bridges can be fitted with various types of lip.

Hinged lip

This 'opening' lip is available in lengths of 400 and 500 mm. Depending on the purpose (pallet jack, electric forklift or diesel/gas forklift) they can be supplied level with a double milled head or folded at a 5° angle to ensure a snugger fit with the surface, with straight or bevelled sides, tailored to the type of truck and its load.

Telescopic lip

This is a lip that slides out horizontally and is available in lengths of 500 and 1000 mm. This lip can slide out to the required length.

Capacity

Loading bridges come as standard with 6-ton dynamic strength (= 9-ton static resistance) as standard. The loading platform is fitted with a tread plate with a 5/7 thickness, reinforced with laminated profiles that will guarantee this strength without distorting. The lip is made of tread plate with a thickness of 13/15 and has been further reinforced by means of the extended 'open' hinges.

Materials

All of our loading bridges can be supplied in a hot-dip galvanised or stainless steel (304 or 316) finish. Steel loading bridges are given a RAL 7016 anthracite grey coating as standard, but on request they can be coated in any RAL colour.

Safety

All of our loading bridges come with a CE-label and a conformity certificate in accordance with the prevailing standards.

- The control unit is fitted with an emergency stop and has protection rating IP56.
- Hydraulic safety valve. If the truck leaves the dock unexpectedly, the loading bridge will lock in place and retain its level.
- Toe guards
- Signage strips
- Door-bridge safety device (option):
 - Motorised door: connection between the control units.
 - Manually operated door: protected by means of a micro switch, sensor or photocell.
- Maintenance support
- Automatic return (on request)

Insulation

On request, the loading bridge can be fitted with insulation under the platform or with draft-excluder brushes.



Stainless steel

Selecting the loading bridge

When choosing your loading bridge(s), you should keep the following information in mind:

- Loading bridge height: between 1,100 and 1,300 mm. Either the frequency or the ratio between your own trucks and external transport needs to be considered.
- The length of the loading bridge is determined based on the maximum height differences between the dock and loading platform for your internal transport systems. The maximum permissible incline for a manual pallet jack is 6%, for an electric pallet jack 8%, an electric forklift 11% and for a diesel or gas forklift 15%.
- The height difference divided by the incline determines the length of the loading bridge.
- You can choose from the following widths: 1800, 2000 or 2200 mm. This depends on the internal width of the most commonly used trucks and the goods to be loaded.

Optional: ancillary loading docks

Built-in loading bridges can also be built on to the exterior of your premises, provided you put a weight-bearing structure in place. Weight-bearing structures can be tailored to your specific requirements and options and can be supplied with or without a tunnel. This type of upper structure can be fitted with any type of sheeting, insulated or transparent.

Loading bridge accessories

Roller guides: various types and finishes

Dockmatic: dock guard

Dock buffers

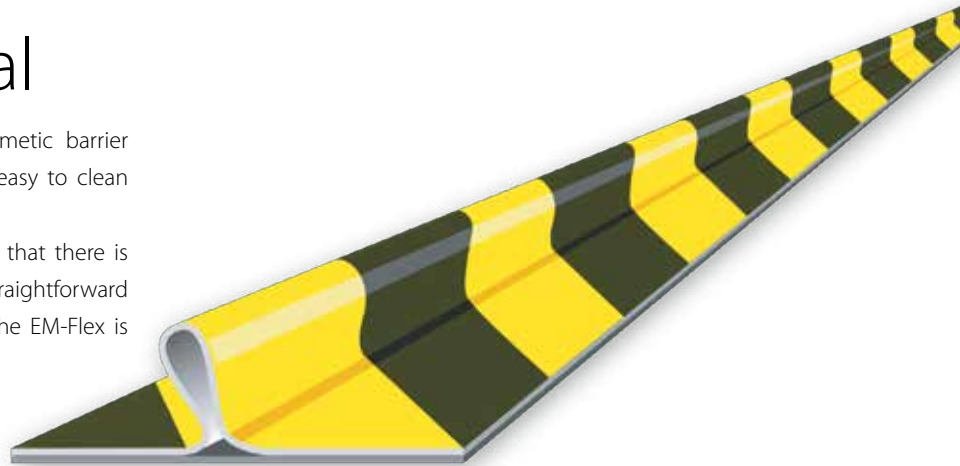
Dock shelters: compressible, fixed frame, built-in type, inflatable draft cushions of various types

Some of the many possibilities are shown below and on the next page.

EM-Flex Dock leveller seal

The Em-Flex dock leveller seal provides a hermetic barrier against dust, fine dust and diesel particle. It is easy to clean using a high-pressure washer.

This highly effective insulating seal also ensures that there is no heat loss. The magnetic base ensures fast, straightforward installation. Thanks to its universal application, the EM-Flex is suitable for all makes and types of dock levellers.



Rail protectors and guard posts prevent damage

L-DOOR's rail protectors and guard posts protect the door against collisions. This can mean significant savings on your service costs.



Roller guides for optimum comfort

L-DOOR roller guides enable truck drivers to dock with great comfort. The roller guides ensure that the trucks cargo space is positioned right in front of the loading bridge. This prevents any unnecessary damage to your logistic equipment. The roller guides are manufactured from top-quality, hot-dip galvanised steel.



Dockmatic: the best choice for **safe** docking

Thanks to its wheel-lock system, Dockmatic ensures that trucks are automatically at the ideal distance from the loading bridge. This system enables trucks to be positioned against the dock with great precision.

Ask your adviser for more information and a detailed product sheet.



Protection with rubber or steel **dock buffers**

Prevent your loading dock from being damaged with L-DOOR rubber or steel dock bumpers. When designing your docking system, L-DOOR invariably makes sure that work can be carried out quickly and safely. Loading and unloading can cause considerable damage to both docks and trucks.

Dock shelters for greater comfort and flexibility

Use

The compressible dock shelter is designed to be used in warehouses, logistics centres and all types of workplaces. It delivers significant energy costs, good insulation and more comfort and flexibility during loading and unloading.

Description

The dock shelter consists of a perimetric construction with a canvas connecting piece to suit the dimensions of the vehicle. This structure is designed to be compressible so that the dock shelter reverts back to its rest position if the vehicle makes an incorrect manoeuvre.

Composition

The compressible dock shelter consists of the following elements:

Construction: the shelter is constructed from galvanised tubing with a thickness of 2 mm which have been welded together with galvanised bars.

The PVC cover is reinforced with flexible polyester to give it an extra-long service life.

Covers: two lateral covers, with yellow strips, are connected to the upper cover that forms the roof. These covers are made from two layers of supple woven polyester. They are flexible and have a 3 mm PVC coating. They are also wind and scratch-resistant. The welded reinforcement makes the upper cover tear-proof and more hardwearing.

Flexibility and insulation

The compressible dock shelter is specially designed to offer more flexibility when loading and unloading vehicles of various sizes. While the goods are being transferred, the installation is also protected from the elements, which reduces your energy costs and makes working far more pleasant.

Safety

All dock shelters come with vertical reflective strips. This makes docking easier and helps to avoid collisions that could damage your equipment and the vehicle itself.





Inflatable dock shelters: suited to all your needs

Inflatable dock shelters are designed to ensure an optimum seal when loading and unloading. Having the perfect connection to the truck means making appreciable savings on your energy costs by achieving thermal insulation from the outside, as well as improving hygiene on the inside. And without compromising on comfort and flexibility.

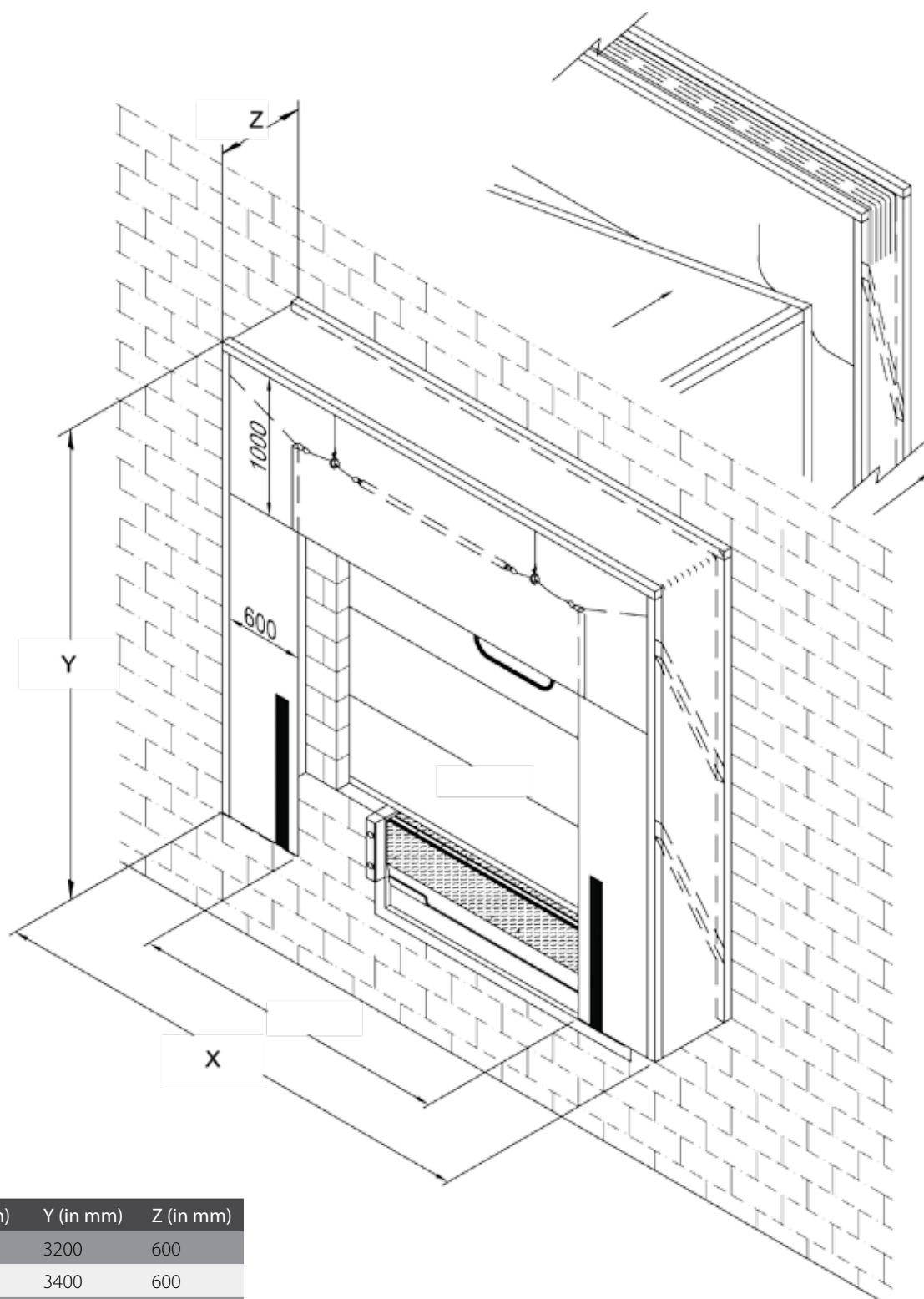
Inflatable dock shelters consist of PVC tarpaulins on the outside 400 mm wide, and an electric motor that inflates the shelter once the truck has docked. The air chambers on the side fold away when the dock shelter is not being used to make docking easier and to avoid any damage.

The air chambers are made from PVC 3 mm thick. They are very tough and watertight so that they create a totally airtight in the side, upper and lower air chambers.

All L-DOOR dock shelters comply with all of the safety regulations in effect.



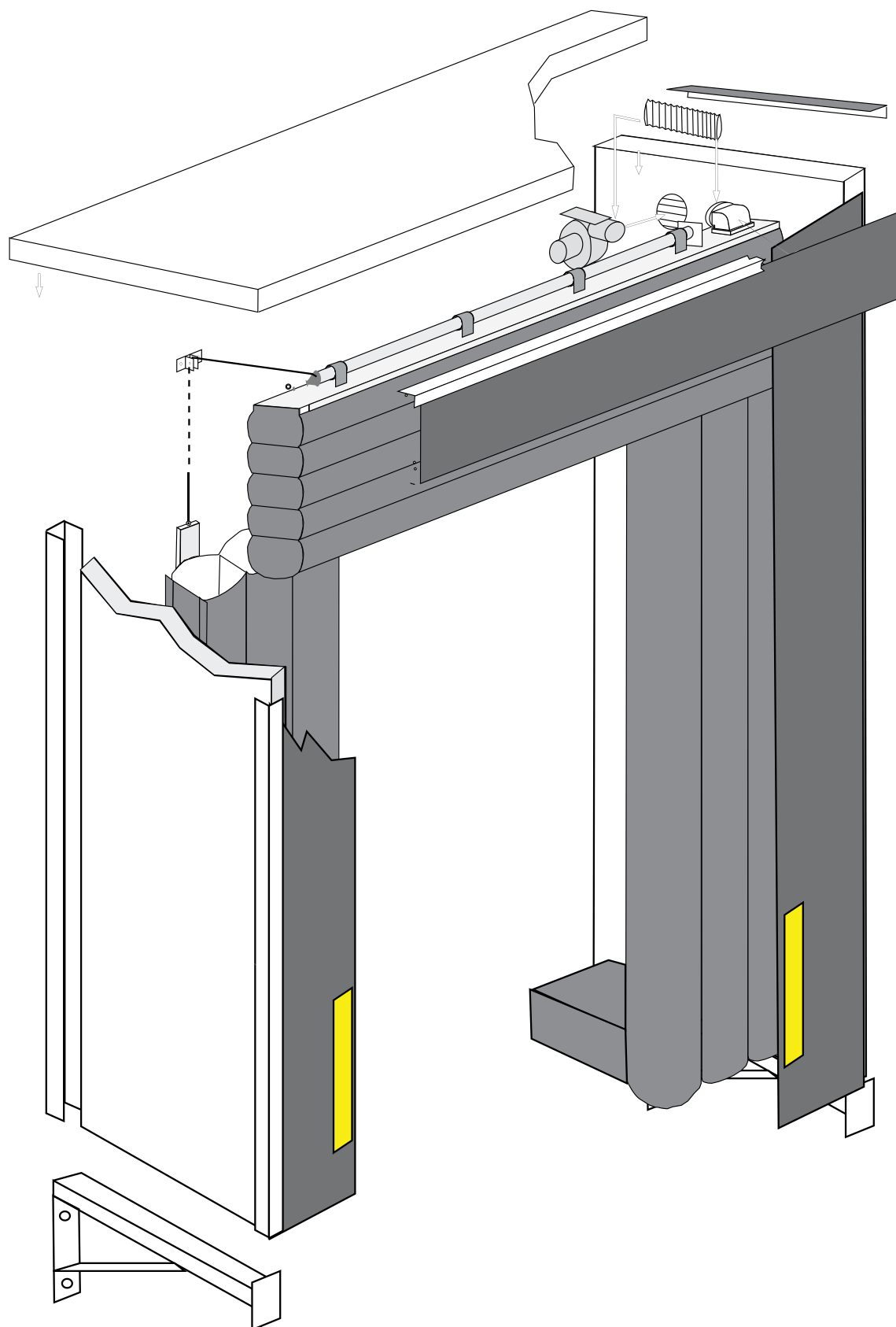
Retractable dock shelter



| X (in mm) | Y (in mm) | Z (in mm) |
|-----------|-----------|-----------|
| 3200 | 3200 | 600 |
| 3200 | 3400 | 600 |
| 3200 | 3600 | 600 |
| 3400 | 3400 | 600 |
| 3400 | 3600 | 600 |
| 3400 | 3800 | 600 |
| 3400 | 4000 | 600 |
| 3400 | 4400 | 600 |

Available on request with projection of 800 and 1000 mm
Top flap available in heights of 1200 and 1500 mm

Inflatable dock shelter



Top-quality **high-speed doors** for a variety of applications

L-DOOR's extensive range also includes high-speed doors for both internal and external use. High-speed doors ensure that any drafts and dust stay on the outside and you keep the heat or cold inside. The fast opening operation enables your employees to transport merchandise quickly and efficiently within your company. High-speed doors are used for all sorts of applications. To ensure the safety of you and your employees, high-speed doors are always fitted with photocell protection and 'safety edge'.

EXT high-speed door

Fast, robust and reliable in all conditions

The L-DOOR EXT high-speed door is a robust, reliable and safe high-speed folding door that provides rapid access. It is suitable for medium-sized and large door apertures and operates problem-free in the widest range of conditions, including for access points that are exposed to the wind and unusual situations, such as areas where there is a low-pressure environment. The door is equipped with a totally concealed built-in motor that operates on low voltage. This means that it uses less energy and the door will operate for longer. The door has a balancing system with modular counterweights on robust straps, guaranteeing safe, simple and reliable operation.

SRX high-speed door

Door with self-resetting sail and counterweight system for fast, safe access. Designed for highly intensive usage

The L-DOOR SRX high-speed door is known for its robust and compact self-supporting structure and a motor at the front with a protective cover in black ABS. The motor has an exclusive design and is quick and easy to access to inspect the parts. The motor is equipped with a semi-automatic re-opening system for emergencies (option) that can be fully automated with the APS system.

The L-DOOR SRX high-speed door is distinctive for a number of important safety systems, such as the balance system, the SLE (Safety Linear Encoder) system and the sequential barriers (option).

SR high-speed door

Maximum functionality, with the special self-resetting system

The L-DOOR SR high-speed door has a very important feature: the special, innovative self-resetting system. Because the high-speed door is simple and automatic to open and close, the sail can be reset if it happens to shift off its guides. This means that after it has been dislodged, the door will reset itself during its next opening cycle.

SRF high-speed door

The high-speed door for the food sector Compact, versatile and innovative

The L-DOOR SRF high-speed door is ideal choice when hygiene and ease of use are the most important requirements. In addition to applications in the food-processing sector, this high-speed door can also be used in warehouses, supermarkets and car-wash installations. The L-DOOR SRF reduces dirt, loss of heat, noise and dust. The high opening and closing speed (up to 1.5 m per second) and its compact dimensions make it possible to optimise the traffic of goods, people and vehicles.





Opt for greater safety with a sectional fireproof door or roller shutter

Sectional fireproof door PS60

The fire resistance of your sectional door is achieved thanks to a patented frame and door leaf that meet fire-resistance rating RF60. The vertical angle irons are fitted together with the frame. The 40 mm thick panels, which make up the door panel, are fitted in the same way as they are in a normal sectional door. L-DOOR fireproof doors are operated by a hydraulic motor (3-phase/400 V). When fire breaks out, an additional 24 V motor, powered by a low-voltage emergency power supply, ensures that the door closes properly. This fireproof door comes in grey as standard.

- The sectional fireproof door offers a range of benefits:
- panel 40 mm thick;
- synthetic material: no rust;
- top-quality metalwork;
- waterproof and airtight;
- limited overall dimensions;
- electric or hydraulic drive system;
- approved by the agricultural, food-processing and medical sectors;
- RF60, EI60, EW60.

L-DOOR sectional fireproof doors are tested and approved in accordance with European standards CEN1363-1 and CEN1634-1, shortly to come into effect, and are also Benor-approved.

The photos below show a test lasting 75 minutes, which was passed by the L-DOOR sectional fireproof door with flying colours.



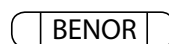
VR60 fireproof roller shutter

The fire resistance of your sectional door is achieved thanks to a patented frame and door leaf that meet fire-resistance rating RF60. Its mechanism is comparable to that of a sectional door. The guide profiles are fitted on top of the frame and consist of 2 sections in order to limit temperature transfer. They form a U-profile that acts as a guide for the shutters into which a PVC profile is inserted that simultaneously acts as finish and an airtight and waterproof seal. The drive drum (diameter 159 mm) moves along 2 universal bearings so that the door leaf rolls up and down smoothly and completely stress-free. L-DOOR fireproof roller shutters are operated by means of a powerful 3-phase motor (3-phase/380 V) linked to reliable worm wheel transmissions. When fire breaks out, an additional 24 V motor, powered by a low-voltage emergency power supply, ensures that the door closes properly.

The fireproof roller shutter features many benefits:

- synthetic material: no rust;
- dyed in the mass (light grey);
- closely resembles a traditional roller shutter;
- very lightweight mechanism and door leaf;
- waterproof and airtight;
- limited overall dimensions;
- new-generation MFZ motor;
- approved by the agricultural, food-processing and medical sectors.

L-DOOR fireproof roller shutters are tested and approved in accordance with European standards CEN1363-1 and CEN1634-1, shortly to come into effect, and are also Benor-approved.



Industrial roller shutters

Industrial roller shutters consists of single-skin aluminium or steel strips that provide excellent protection. Their metal appearance means that these shutters are always considered as being very sturdy. These roller shutters are able to seal off large accessways. Double-skin insulated profiles are also possible. These roller shutters are operated by a motor, making it entirely effortless to open or close them. With a turn switch on the inside and a key switch on the outside, as well as remote control unit, etc. – there are so many different options.

With roller shutters that operate electrically, there are a number of safety aspects that need to be taken into account. Motors can also be fitted with an emergency manual operation system so that the roller shutter can still be operated if there is a power cut. The roller safety device prevents the roller shutter from falling downwards freely if the motor breaks down. Once the rotating barrel exceeds a specific number of rpm, it is locked by the roller safety device.

To avoid the roller shutter from being obstructed in its



downward cycle and becoming jammed, an optical detection sensor or bottom slat safety device can be installed.

If you want to protect the roller shutter from its environment, a galvanised steel casing can be fitted around the roller shutter. You can also have your roller shutter(s) painted in the RAL colour of your choice.





Manage **your** logistics equipment at a glance

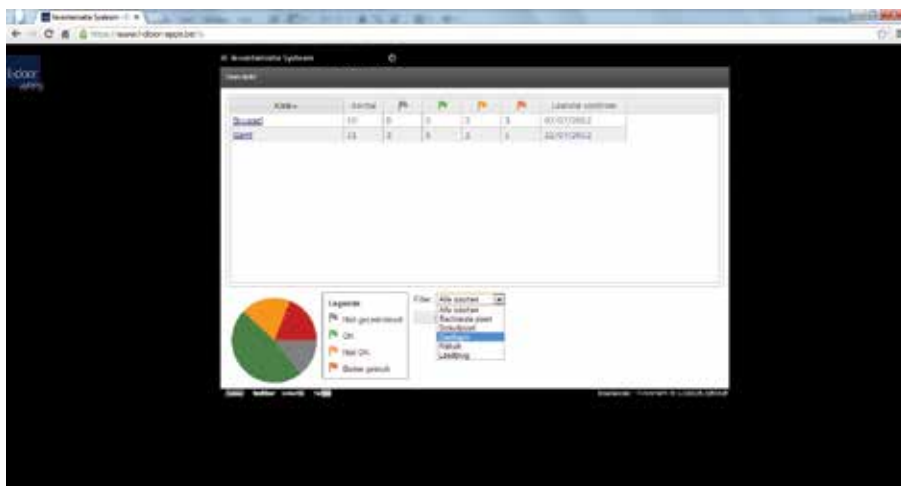
Even though your premises cover a considerable area, you still want to have an instant overview of your logistic equipment. To meet that requirement, L-DOOR can offer you an inventory control system tailored to your company. This system allows you to follow any interventions to your various doors and loading equipment as they occur.

Using this system, you can retrieve and approve price quotes directly to avoid wasting valuable time. You can also view all of your invoices in a trice. Need a work intervention? Use the system to enter a request for a specific installation.

This inventory control system is always tailored for your company. Do not hesitate to contact your adviser for further information.

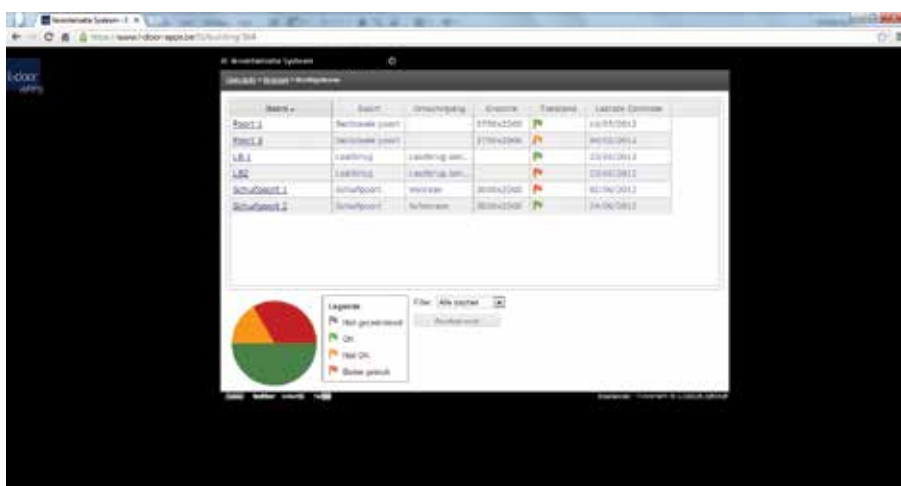


Login screen with personal user name and password. You can create multiple user accounts for each company, with or without specific rights.

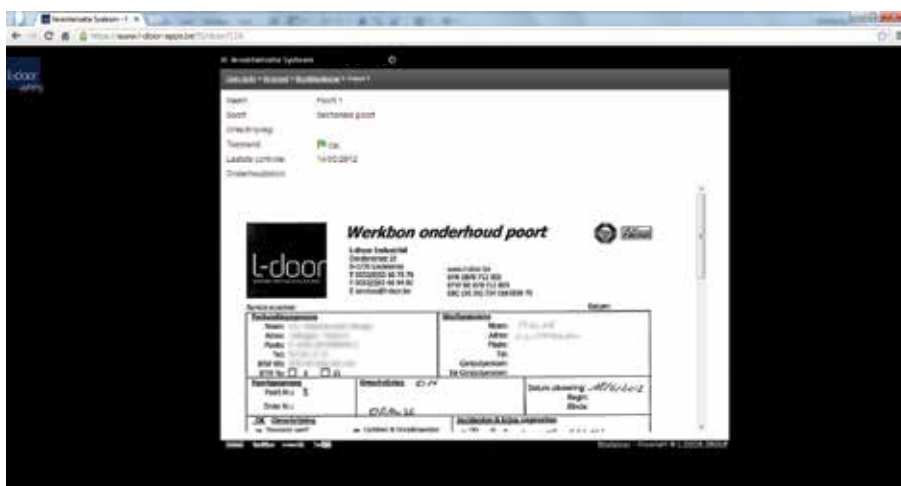


Summary of all your sites and numbers per location, with the option of filtering on a specific type of installation, such as high-speed doors.

You can also export data directly to Microsoft Excel.



Summary and status of all installations in 1 building.



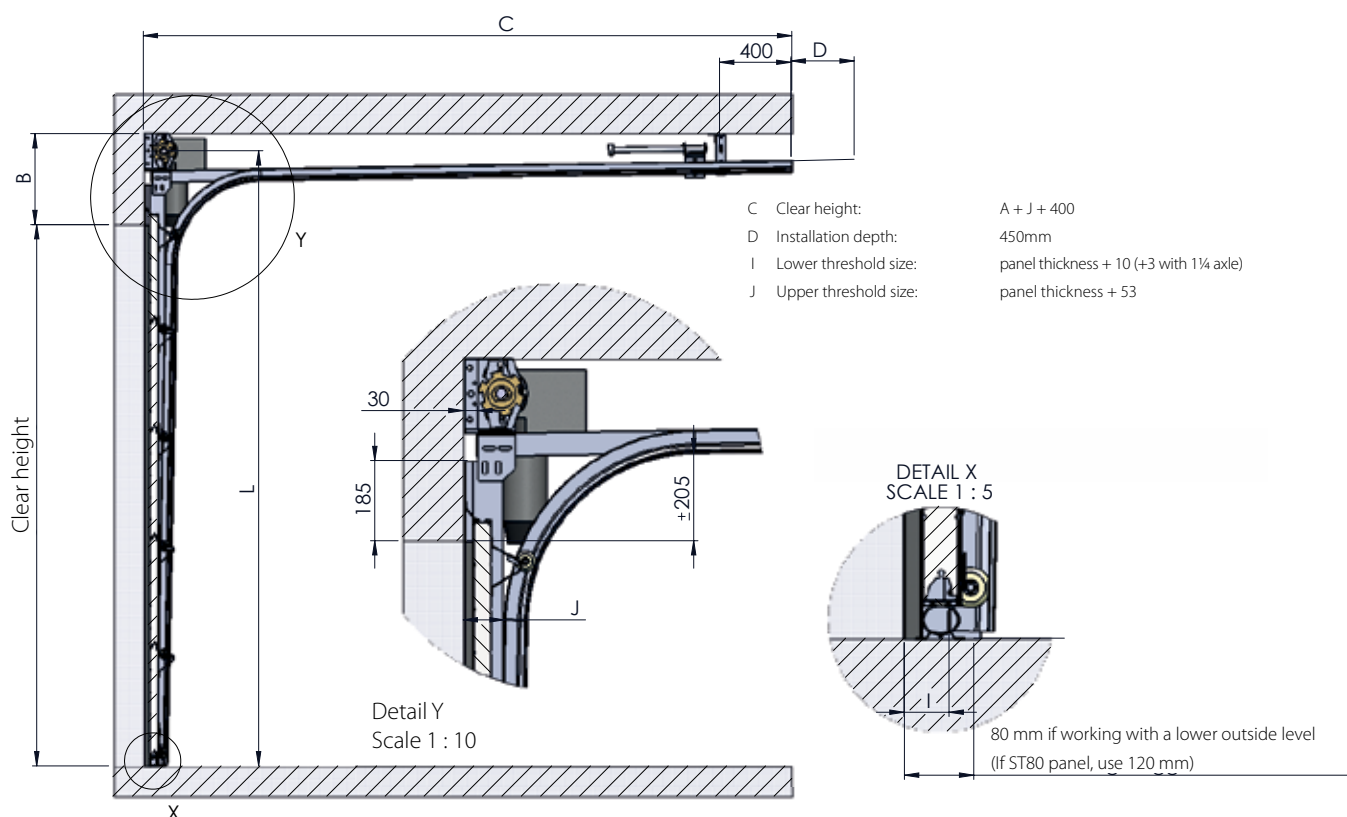
Overview of the installation docket (maintenance) per installation.



Technical information

Technical sheets not included in the product catalogue can be obtained from your adviser on request.

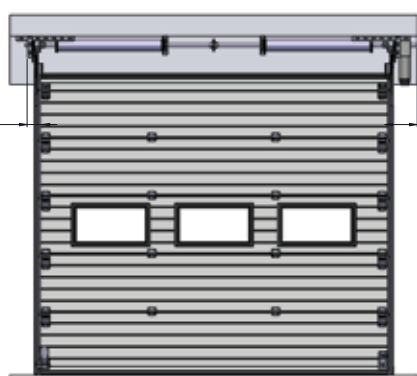
Normal Ceiling System



| A Clear height | Cable drum | | Axle * | B Headroom | L Dimension between centre lines |
|-------------------|------------|---------|--------|---------------|-------------------------------------|
| mm | kg | mm | inch | mm | mm |
| ≤ 3360 | ≤ 340 | Ø 121,6 | 1 | 420 | A + 341 |
| ≤ 5500 | ≤ 500 | Ø 152,4 | 1 | 450 | A + 341 |
| ≤ 9750 | ≤ 680 | Ø 228,6 | 1 | 510 | A + 387 |
| ≤ 9750 | ≤ 726 | Ø 228,6 | 1¼ | 525 | A + 387 |

1¼ inch axle if door area > 28 m²

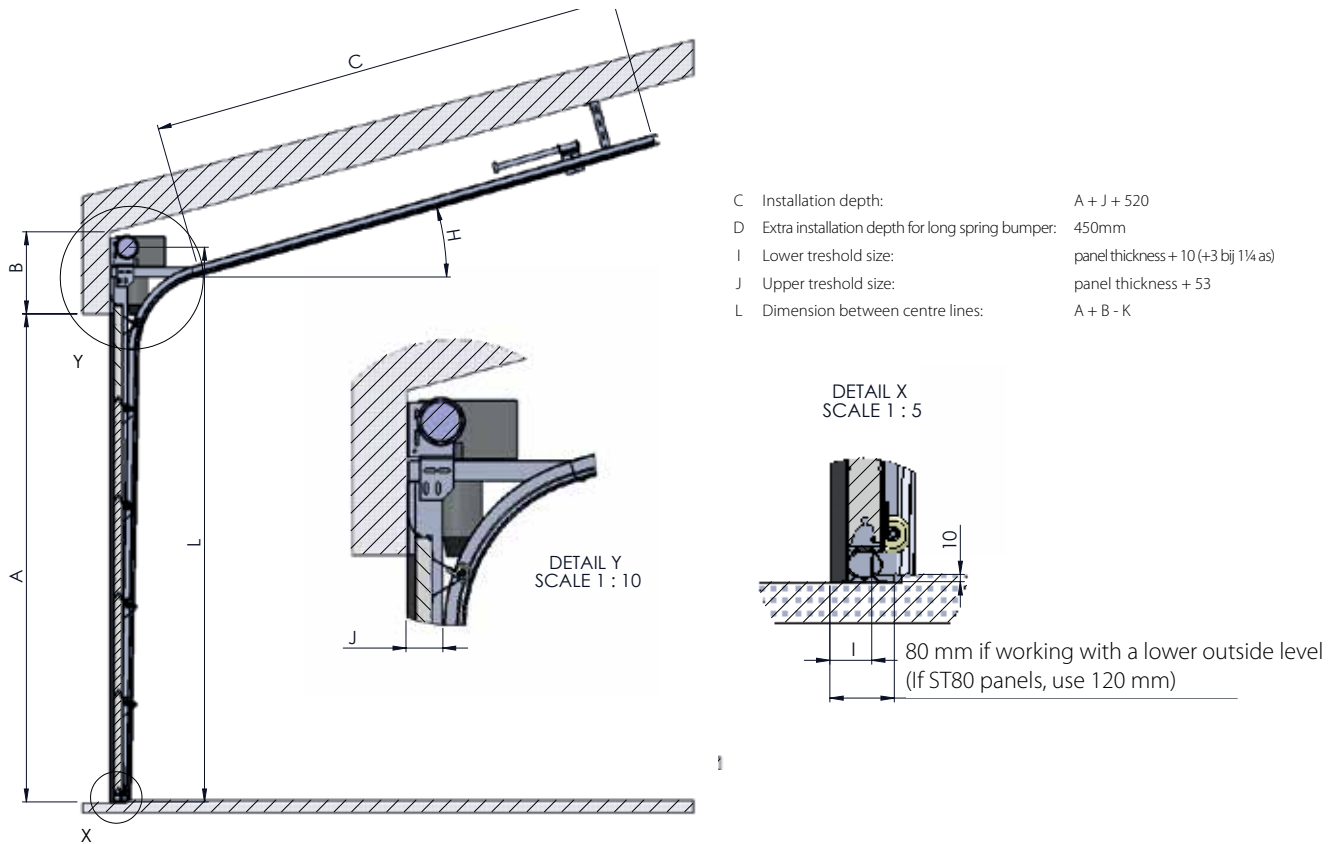
120 mm over the whole clearance height, incl. necessary headroom



300 mm only space above to be provided where the motor is installed

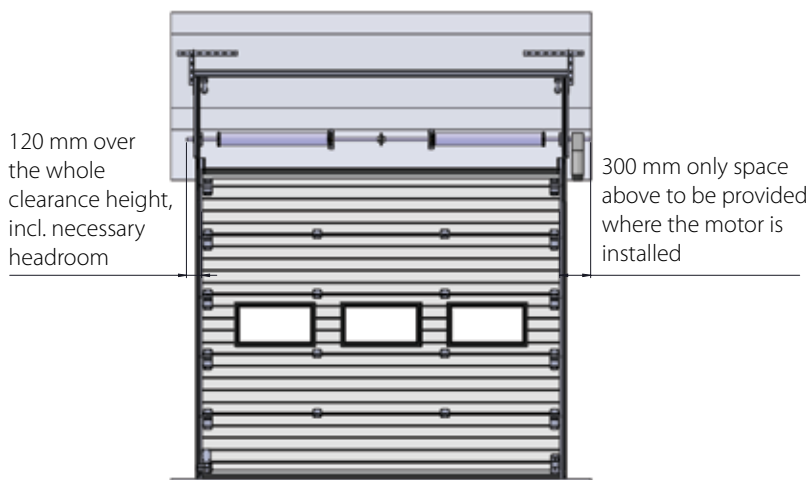
If the motor is to be placed on the left-hand side, the required side space must be provided as a mirror image

Normal Ceiling System following the roof line



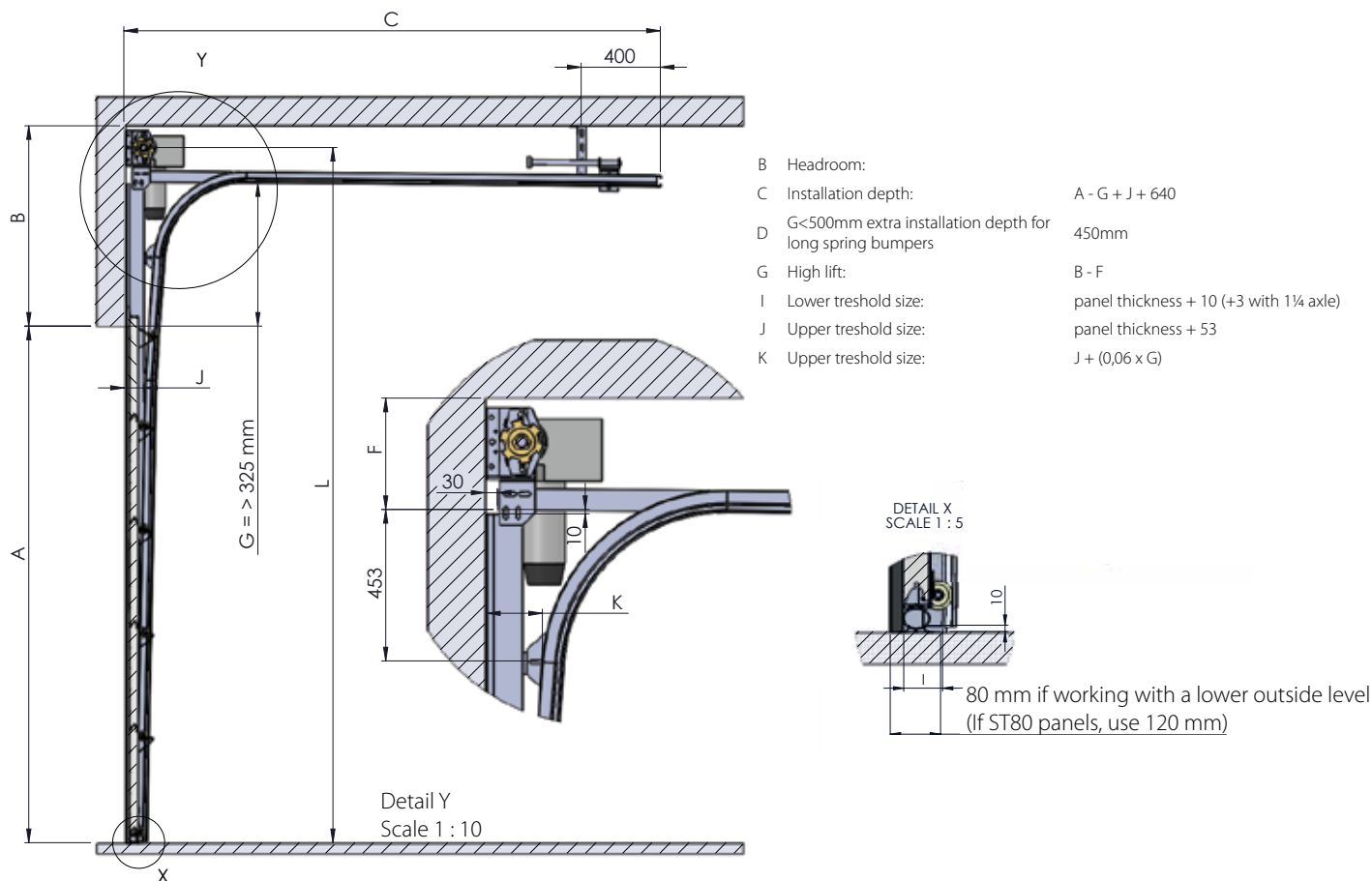
| A Clearance height | Cable drum | | Axle* | B Headroom | | | K |
|-----------------------|------------|---------|-------|---------------|---------|------|-----|
| | | | | H = < 10° | H > 10° | | |
| | | | | | (40) | (80) | |
| mm | kg | mm | inch | mm | mm | mm | mm |
| ≤ 3360 | ≤ 340 | Ø 121,6 | 1 | 420 | 460 | 500 | 84 |
| ≤ 5500 | ≤ 500 | Ø 152,4 | 1 | 450 | 490 | 530 | 84 |
| ≤ 9750 | ≤ 680 | Ø 228,6 | 1 | 510 | 550 | 590 | 133 |
| ≤ 9750 | ≤ 726 | Ø 228,6 | 1¼ | 525 | 565 | 605 | 133 |

* 1¼ inch axle if door area > 28 m²



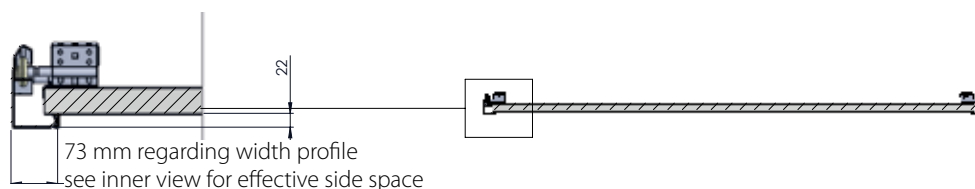
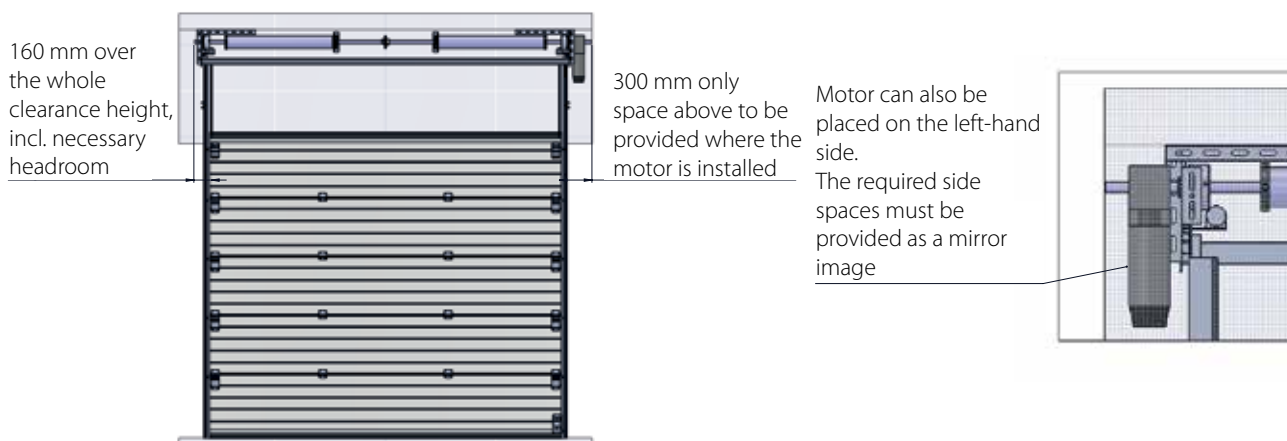
If the motor is to be placed on the left-hand side, the required side space must be provided as a mirror image

High Lift System

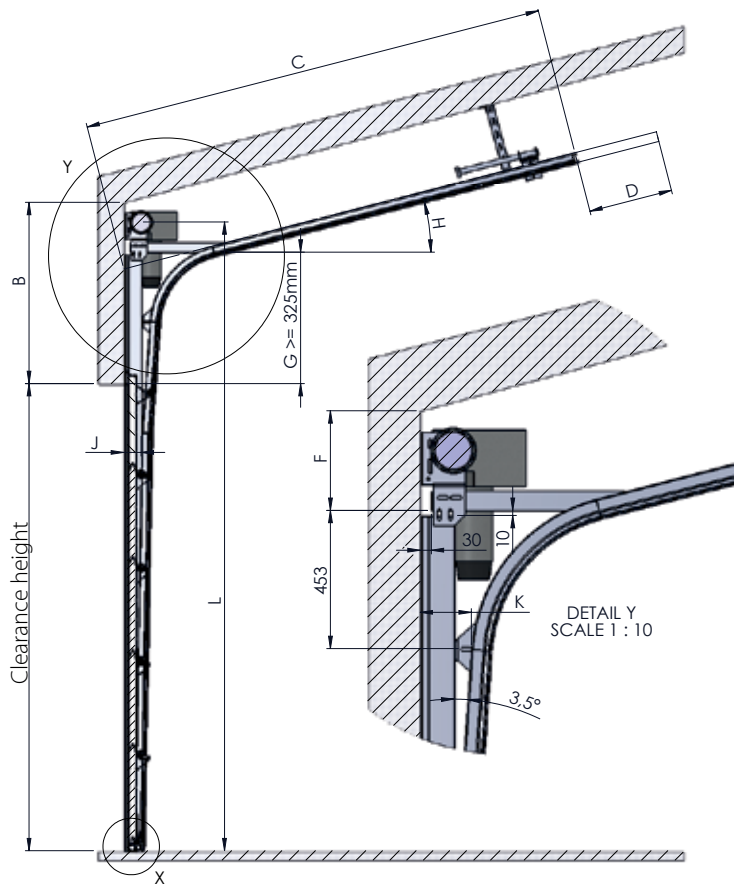


| A Clearance height | Cable drum | | | Axle * | F | L Dimension between centre line |
|-----------------------|---------------|------------|---------------------|--------|-----|---------------------------------------|
| mm | mm | kg | mm | inch | mm | mm |
| ≤ 4800 | $G \leq 1370$ | ≤ 454 | $\varnothing 190,5$ | 1 | 270 | $A + G + 165$ |
| ≤ 4800 | $G \leq 3050$ | ≤ 454 | $\varnothing 234,2$ | 1 | 310 | $A + G + 182$ |
| ≤ 6000 | $G \leq 4100$ | ≤ 726 | $\varnothing 279,4$ | 1 | 360 | $A + G + 207$ |
| ≤ 6000 | $G \leq 4100$ | ≤ 726 | $\varnothing 279,4$ | 1 1/4 | 360 | $A + G + 207$ |

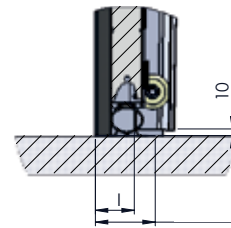
* 1 1/4 inch axle if door area > 28 m²



High Lift System following the roofline



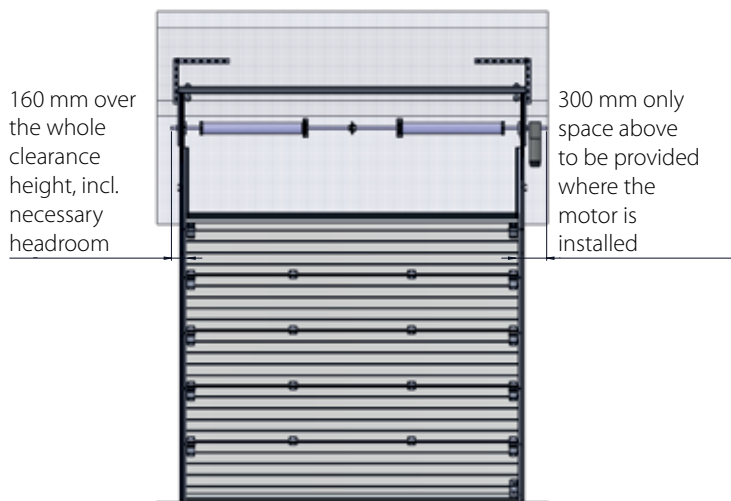
- B Headroom: $A - G + K + 910$
- C Installation depth: 450mm
- D $G < 500\text{mm}$ $H < 5^\circ$ extra installation depth for long spring bumpers
- E High lift: $B - F$
- F Following the roofline: 1° to 44°
- G Lower threshold size: panel thickness + 10 (+3 with 1¼ axle)
- H Upper threshold size: panel thickness + 53
- I Upper threshold size: $J + (0,06 \times G)$
- J Lower threshold size:
- K Upper threshold size:



80 mm if working with a lower outside level
(If ST80 panels, use 120 mm)

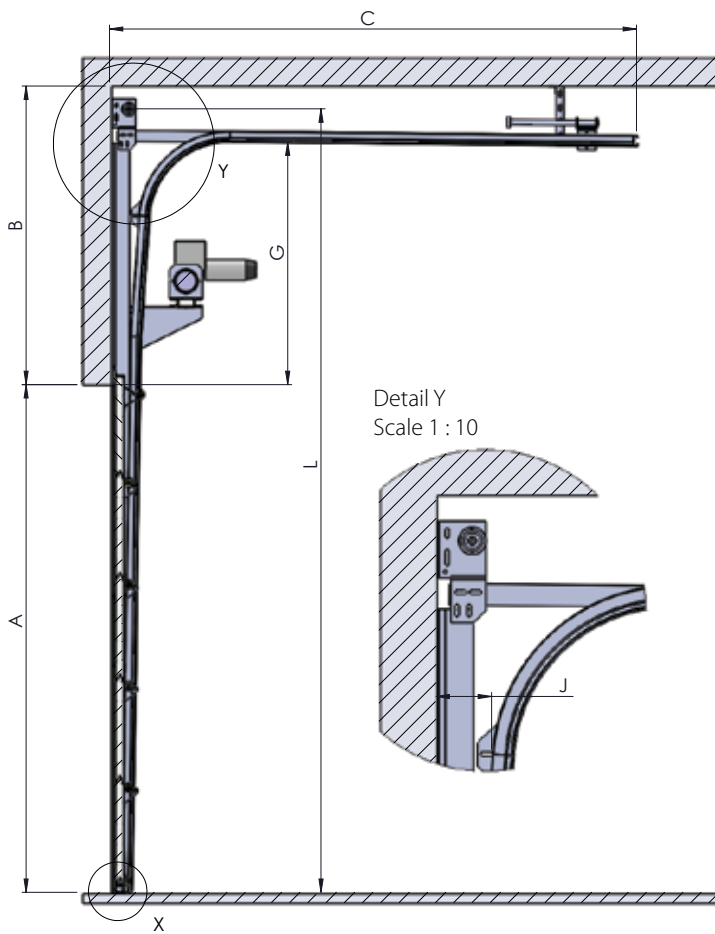
| A Clearance height | Cable drum | | | Axle * | F | L Dimension between centre line |
|-----------------------|---------------|-------|---------|--------|-----|---------------------------------------|
| mm | mm | kg | mm | inch | mm | mm |
| ≤ 4800 | $G \leq 1370$ | ≤ 454 | Ø 190,5 | 1 | 270 | $A + G + 165$ |
| ≤ 4800 | $G \leq 3050$ | ≤ 454 | Ø 234,2 | 1 | 310 | $A + G + 182$ |
| ≤ 6000 | $G \leq 4100$ | ≤ 726 | Ø 279,4 | 1 | 360 | $A + G + 207$ |
| ≤ 6000 | $G \leq 4100$ | ≤ 726 | Ø 279,4 | 1¼ | 360 | $A + G + 207$ |

* 1¼ inch axle if door area > 28 m²

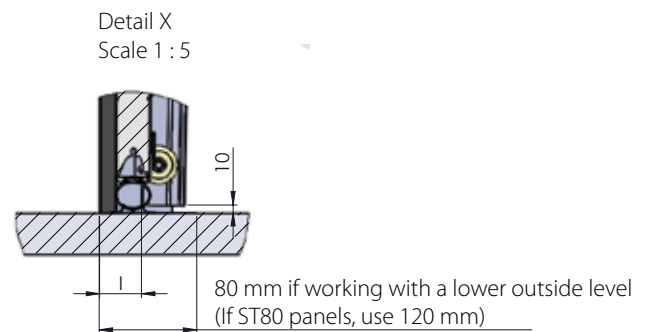


If the motor is to be placed on the left-hand side, the required side space must be provided as a mirror image.

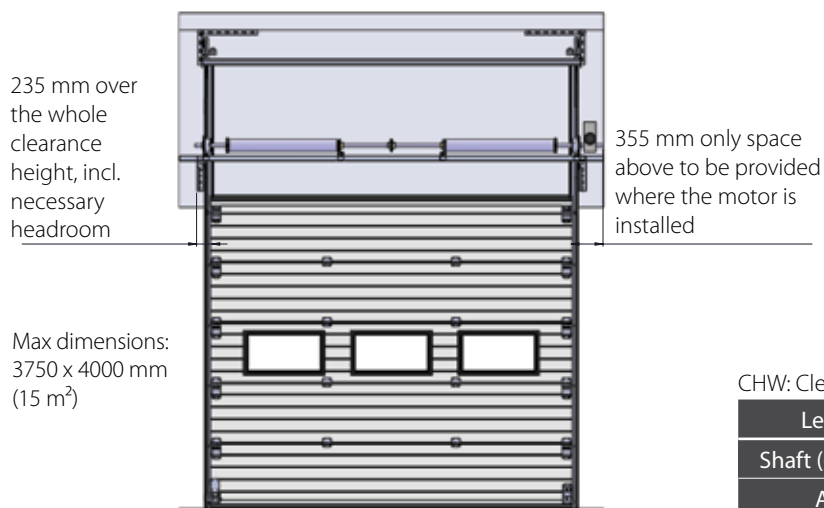
High Lift Dock System



- B Headroom: $G + 325 (\geq 1.100)$
- C Installation depth: $A - G + J + 650$
- G High lift: $B - 250$
- I Lower threshold size: panel thickness + 10
- J Upper threshold size: panel thickness + 53



| A Clearance height | Cable drum | | | L Dimension between centre line |
|-----------------------|---------------|------------|---------------------|---------------------------------------|
| mm | mm | kg | mm | mm |
| ≤ 4000 | $G \leq 1100$ | ≤ 454 | $\varnothing 190,5$ | $A + G - 501$ |
| ≤ 4000 | $G \leq 3050$ | ≤ 454 | $\varnothing 190,5$ | $A + 535$ |
| ≤ 4000 | $G \leq 4100$ | ≤ 726 | $\varnothing 234,2$ | $A + 550$ |

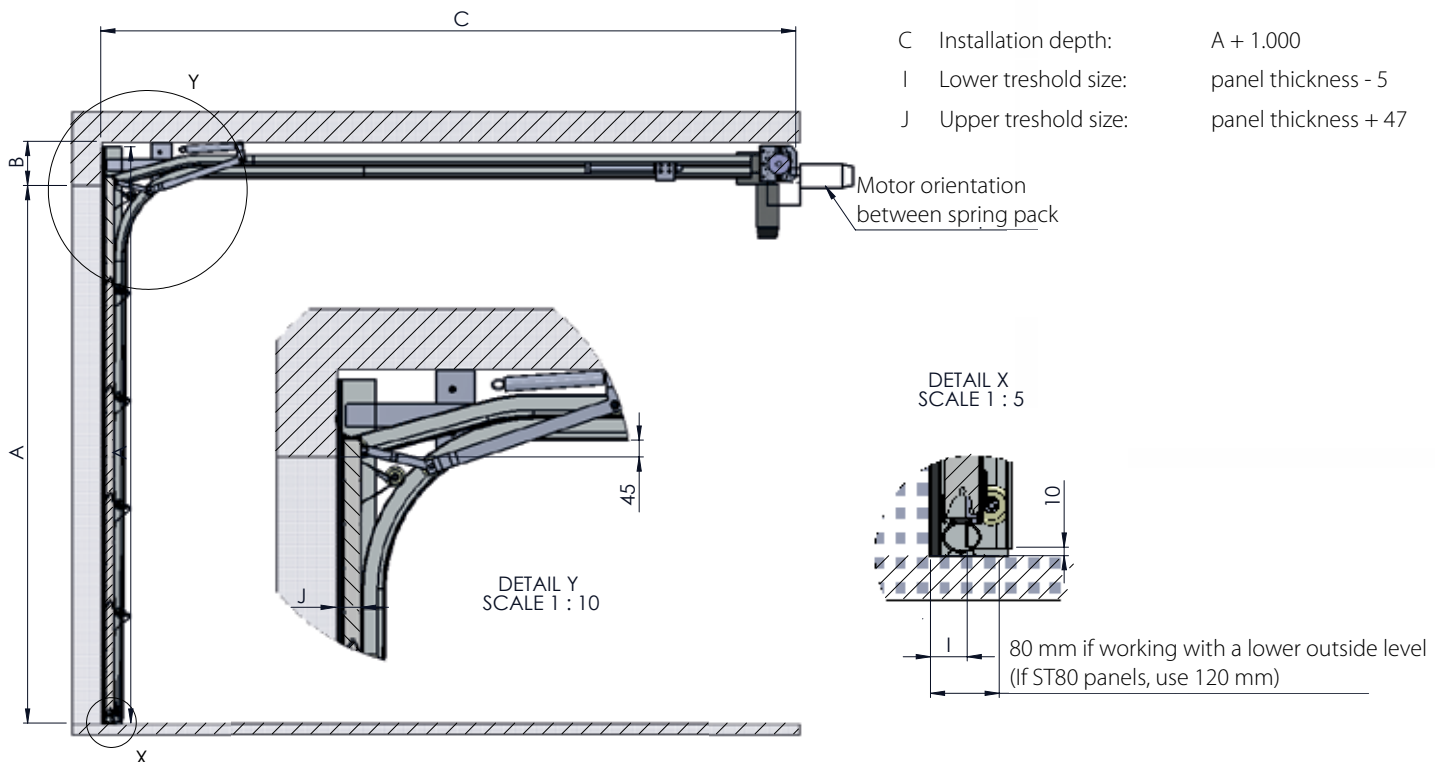


If the motor is to be placed on the left-hand side, the required side space must be provided as a mirror image.
As an exception, the motor can be installed between the spring pack.

CHW: Clearance Height Width

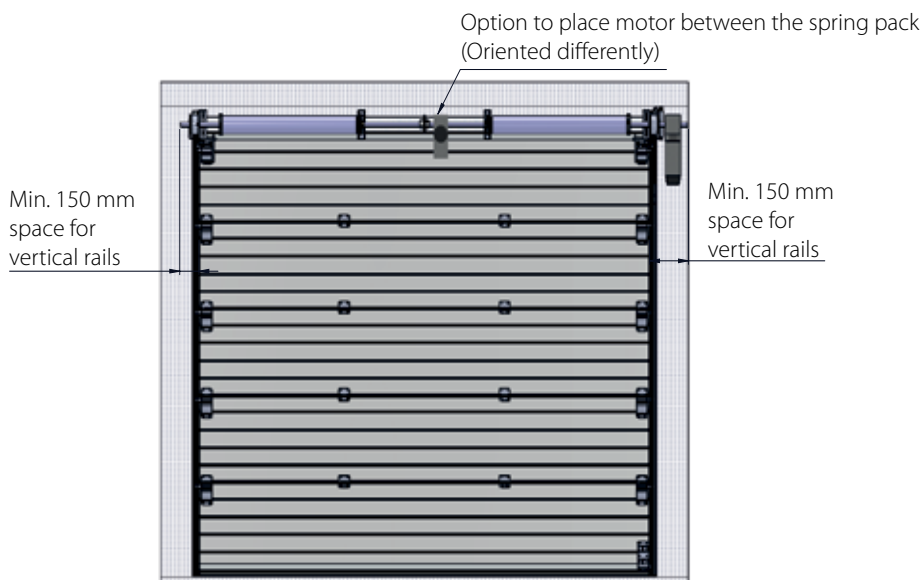
| Length | Manual | Mechanical |
|-----------------|-------------|-------------|
| Shaft (60x40x2) | CHW + 350mm | CHW + 390mm |
| Axle | CHW + 450mm | CHW + 570mm |

Low Ceiling System

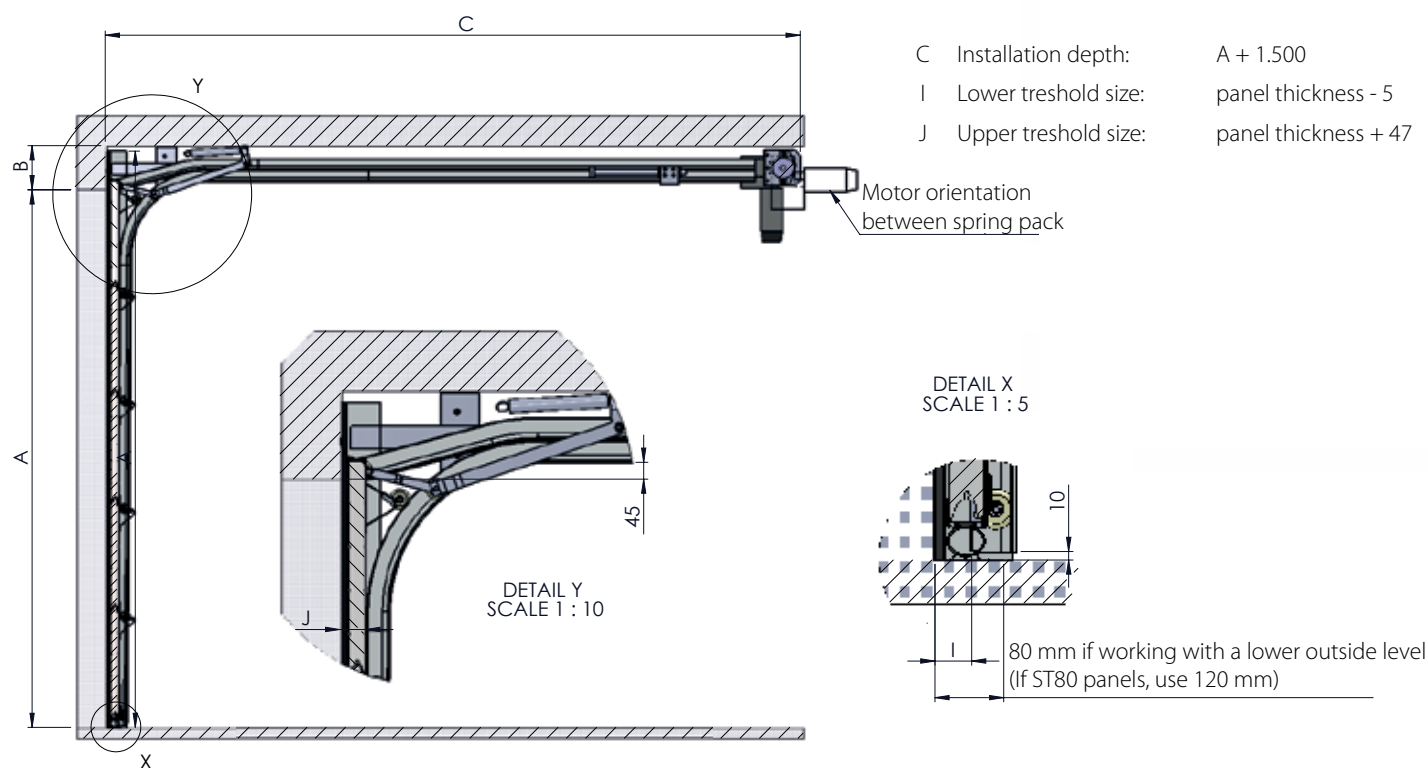


| A Clearance height | Cable drum | | B Headroom |
|-----------------------|------------|-------|---------------|
| mm | kg | mm | mm |
| ≤ 5000 | ≤ 350 | Ø 126 | min. 200 |

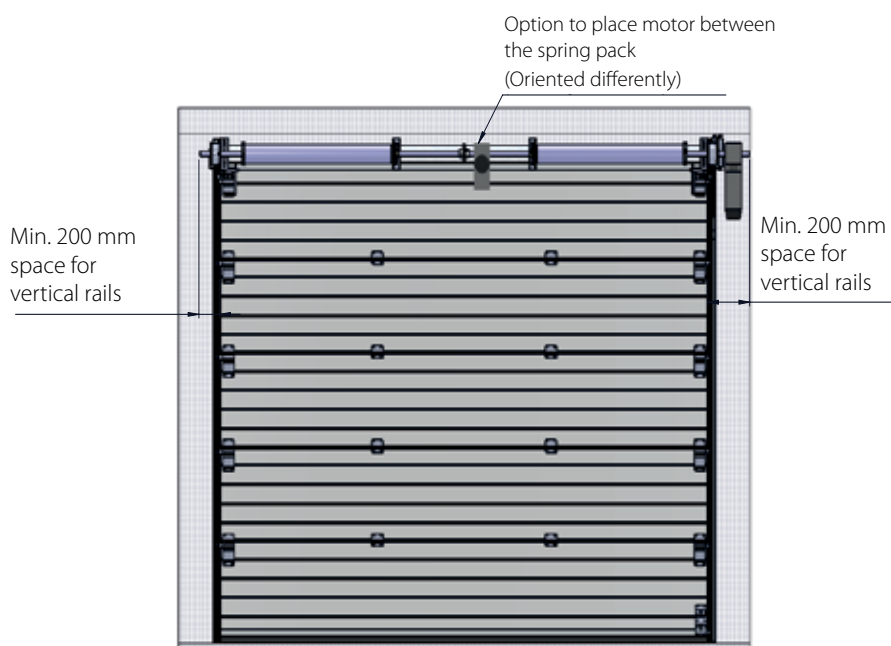
Max. door area <25 m2 Max. 300 kg



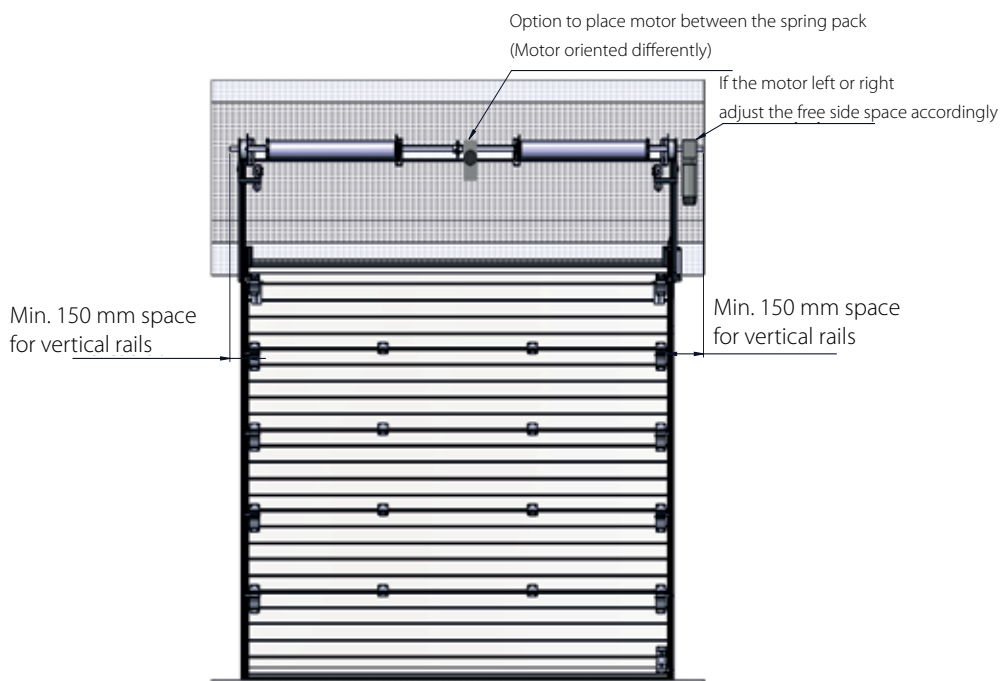
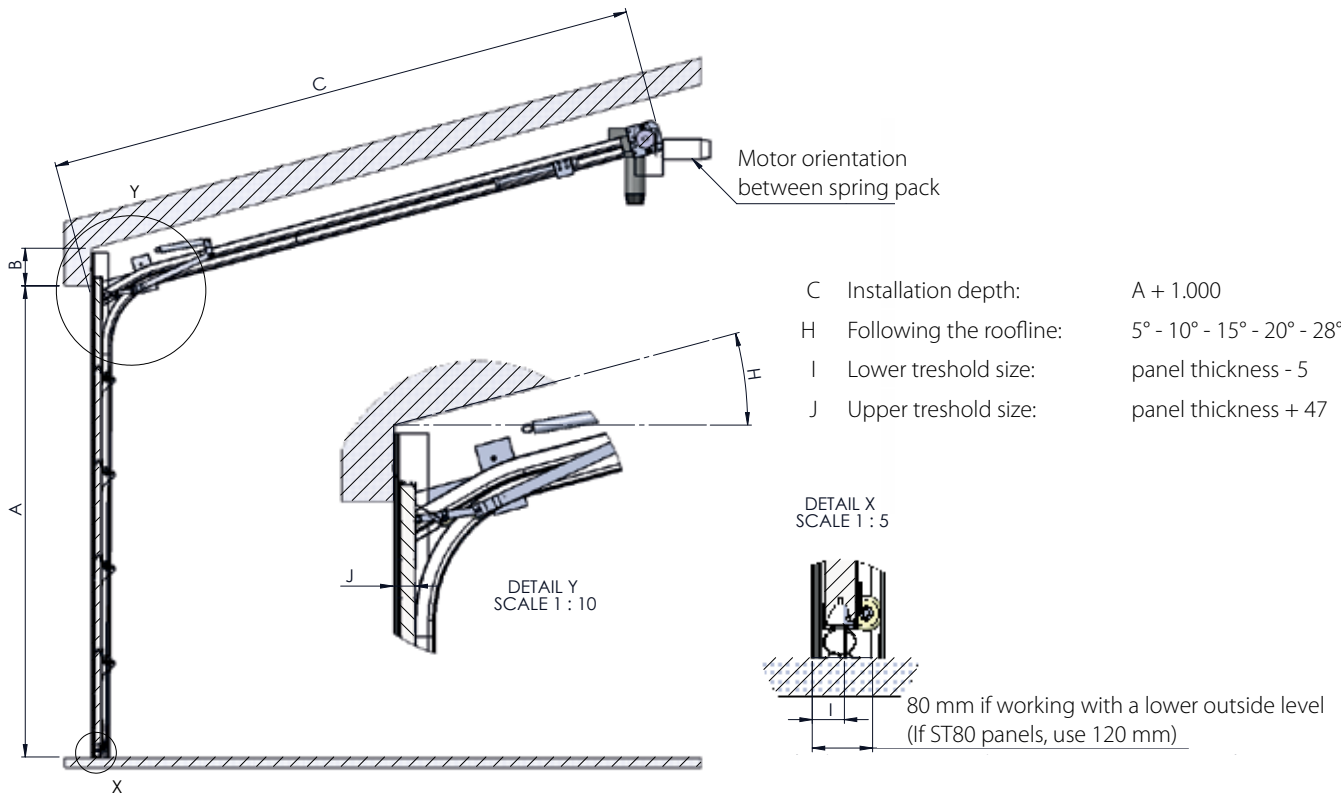
Low Ceiling System 250



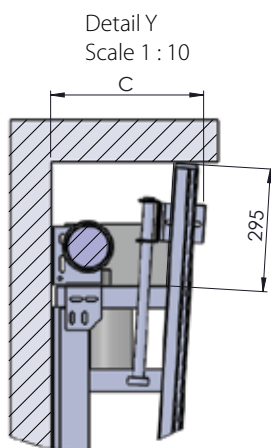
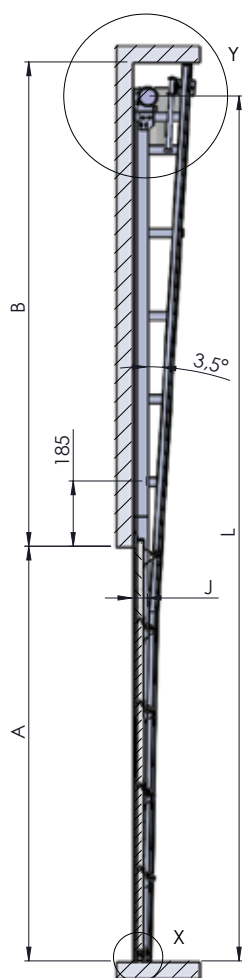
| A Clearance height | Cable drum | | B Headroom |
|---|------------|-------|---------------|
| mm | kg | mm | mm |
| ≤ 9500 | ≤ 850 | Ø 230 | min. 250 |
| Max. door area <40 m ² Max. 500 kg | | | |



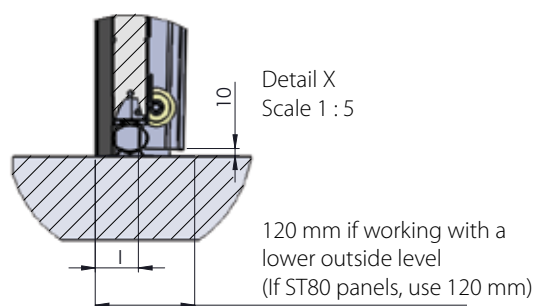
Low Ceiling System following the roofline



Vertical Lifting System

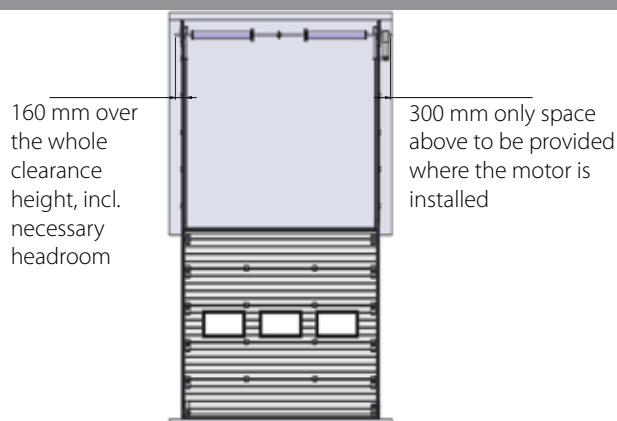


- C Installation depth: $J + 120 + (0,06 \times A)$
- I Lower threshold size: panel thickness + 10 (+3 with 1¼ axle)
- J Upper threshold size: panel thickness + 53



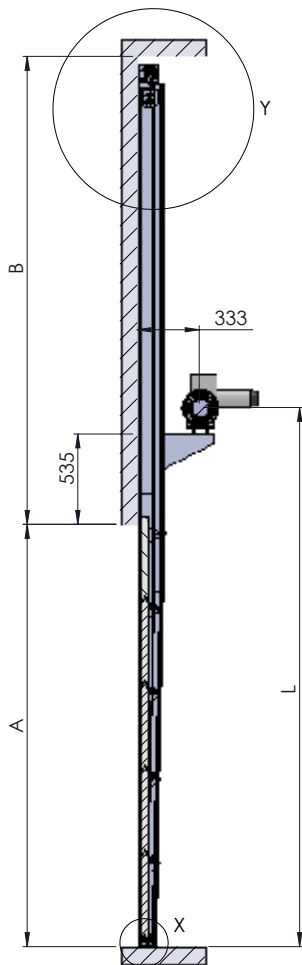
| A Clearance height | Cable drum | | Axle * | B Headroom | L Dimension between centre line |
|-----------------------|------------|---------|--------|---------------|---------------------------------------|
| mm | kg | mm | inch | mm | mm |
| ≤ 3360 | ≤ 386 | Ø 214,0 | 1 | A + 420 | 2 x A + 215 |
| ≤ 5500 | ≤ 500 | Ø 276,2 | 1 | A + 420 | 2 x A + 257 |
| ≤ 5500 | ≤ 500 | Ø 276,2 | 1¼ | A + 420 | 2 x A + 257 |
| ≤ 8500 | ≤ 726 | Ø 341,5 | 1 | A + 510 | 2 x A + 290 |
| ≤ 8500 | ≤ 726 | Ø 341,5 | 1¼ | A + 510 | 2 x A + 290 |

* 1¼ inch axle if door area > 28 m²

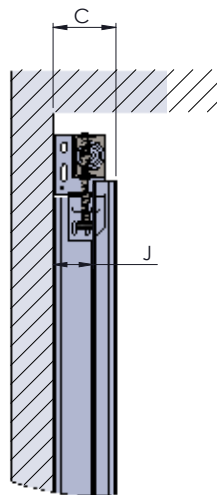


If the motor is to be placed on the left-hand side, the required side space must be provided as a mirror image.

Vertical Lifting Dock System

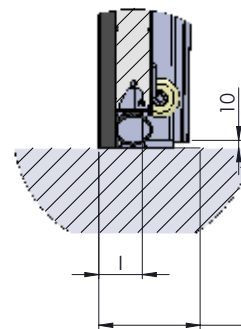


Detail Y
Scale 1 : 10



- B Headroom: $A + 500$
- C Installation depth: ≥ 120
- I Lower threshold size: panel thickness + 10
- J Upper threshold size: panel thickness + 53

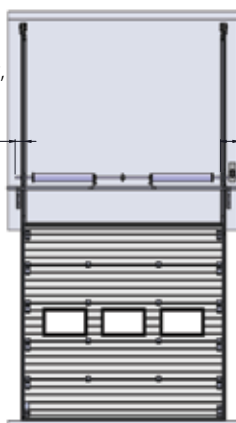
Detail X
Scale 1 : 5



120 mm if working with a
lower outside level
(If ST80 panels, use 120 mm)

| A Clearance height | Cable drum | | Axle * | Installation depth | L Dimension between centre line |
|-----------------------|------------|---------------------|--------|--------------------|---------------------------------------|
| mm | kg | mm | inch | mm | mm |
| ≤ 3300 | ≤ 386 | $\varnothing 214,0$ | 1 | ≥ 445 | $A + 705$ |
| ≤ 5500 | ≤ 600 | $\varnothing 276,2$ | 1 | ≥ 480 | $A + 730$ |

180 mm over
the whole
clearance height,
incl. necessary
headroom



300 mm only space
above to be provided
where the motor is
installed

If the motor is to be placed on
the left-hand side, the required
side space must be provided as a
mirror image.

CHW: Clearance Height Width

| Length | Manual | Mechanical |
|-----------------|-------------|-------------|
| Shaft (60x40x2) | CHW + 340mm | CHW + 340mm |
| Axle | CHW + 340mm | CHW + 485mm |

Electromotor 5.24 -25.4 /9.24-25.4

Weight of sectional door max.250kg =<20m² / 400kg<28m²

| | |
|---|----------------------------|
| Diameter hollow axle | 25,4 mm |
| Drive belt | 50 Nm/90 Nm |
| Static moment M | 200 Nm |
| Doorweight to approx. | 250 kg |
| Drive rpm | 24 min -1 |
| Motor power | 0,30 kW |
| Operating voltage | 3 x 230 / 400 V |
| Frequency | 50 Hz |
| Central voltage | 230 of 24 V |
| Nom. power motor | 1,9 of 1,1 A |
| Duty cycle motor | S3-60% ED |
| Power cable / fuse | 5x1,5 ² / 10A t |
| End stop switch range, maximum rotation of the hollow axle | 20 |
| Permissible temperature range (if different: ask information) | -5°C / +40°C |
| Continuous noise level | <70 dB(A) |
| Protection class | 54 IP |
| Weight | 15 kg |

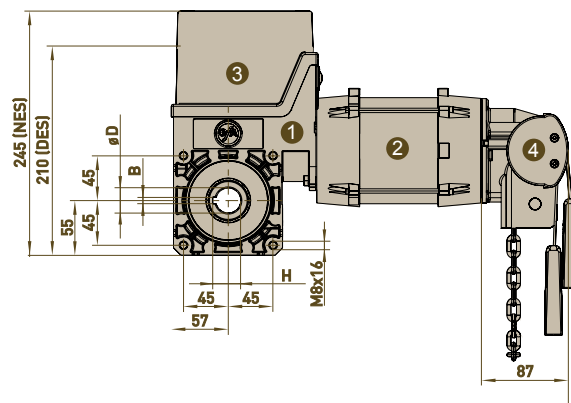


Dimensions:

- 1 Hollow axle / worm wheel drive
- 2 Electromotor
- 3 End stop switch
- 4 Emergency operation

Diameter hollow axle:

D [25.4mm] B [6.35mm] H [28.4mm]



The electromotor is star switched as standard (3 x 400 V + N+ PE). This can be changed to triangular switching (3 x 230 V + PE).

Electromotor 5.24-25.4WS / 9.24-25.4WS Single-phase

Weight of sectional door max. 250kg = <20m² / 400 kg <28m²

| | |
|---|----------------------------|
| Diameter hollow axle | 25,4 mm |
| Drive belt | 50 Nm / 90 Nm |
| Static moment M | 200 Nm |
| Door weight to approx. | 250 kg |
| Drive rpm | 24 min -1 |
| Motor power | 0,37 kW |
| Operating voltage | 1 x 230 V |
| Frequency | 50 Hz |
| Control voltage | 230 of 24 V |
| Nom. power motor | 3,5 A |
| Duty cycle motor | S3-40% ED |
| Power cable / fuse | 3x1,5 ² / 10A t |
| End stop switch range, maximum rotation of the hollow axle | 20 |
| Permissible temperature range (if different: ask information) | -5°C / +40°C |
| Continuous noise level | <70 dB(A) |
| Protection class | 54 IP |
| Weight | 15 kg |

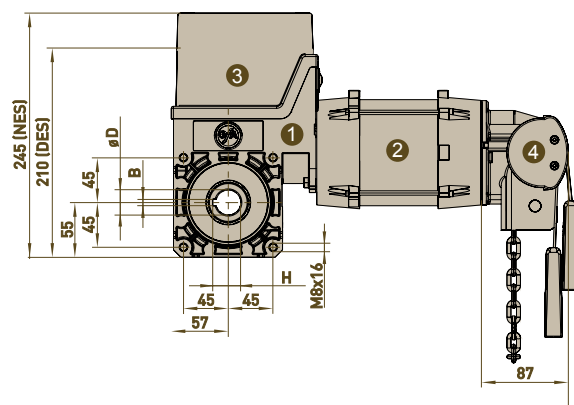


Dimensions:

- 1 Hollow axle / worm wheel drive
- 2 Electro motor
- 3 End stop switch
- 4 Emergency operation

Diameter hollow axle:

D [25.4mm] B [6.35mm] H [28.4mm]



If there is no 3-phase power available, a single-phase electromotor can be used (1 x 230 V+ PE). A single-phase electromotor is limited to a door weight of 250 kg and is not applicable for underground car parks with intensive usage.

Electromotor FU 14.80

Weight of sectional door max.400kg =<28m²

| | |
|---|----------------------------|
| Diameter hollow axle | 25,4 / 31,75mm |
| Drive belt | 140 Nm |
| Static moment M | 450 Nm |
| Door weight to approx. | 600 kg |
| Drive rpm | 24 min -1 |
| Motor power | 0,85 kW |
| Operating voltage | 1 x 230 V |
| Frequency | 50 / 60 Hz |
| Nom. power motor | 2,1 of 1,2 A |
| Duty cycle motor | S3-60% ED |
| Power cable fuse | 3x1,5 ² / 10A t |
| End stop switch range, maximum rotation of the hollow axle | 40 |
| Permissible temperature range (if different: ask information) | -5°C / +40°C |
| Continuous noise level | <70 dB(A) |
| Protection class | 54 IP |
| Weight | 24 kg |

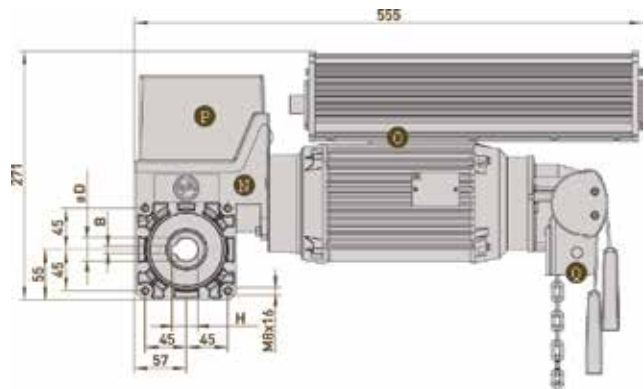


Dimensions:

- 1 Hollow axle / worm wheel drive
- 2 Electromotor
- 3 End stop switch
- 4 Emergency operation

Diameter hollow axle:

D [25.4mm] B [6.35mm] H [28.4mm]
D [31.75mm] B [6.35mm] H [34.7mm]



1 x 230V
SOFT-STOP-START

Electromotor 14.21 -31.75

Weight of sectional door max. 650kg > 28m² = <40m²

| | |
|---|----------------------------|
| Diameter hollow axle | 31.75 mm |
| Drive belt | 140 Nm |
| Static moment M | 600 Nm |
| Door weight to approx. | 650 kg |
| Drive rpm | 21 min -1 |
| Motor power | 0,45 kW |
| Operating voltage | 3 x 230 / 400 V |
| Frequency | 50 Hz |
| Nom. power motor | 4,3 / 2,5 A |
| Duty cycle motor | S3-60% ED |
| Power cable fuse | 5x1,5 ² / 10A t |
| Permissible temperature range (if different: ask for information) | -5°C / +40°C |
| Continuous noise level | <70 dB(A) |
| Protection class | 54 IP |
| Weight | 16 kg |

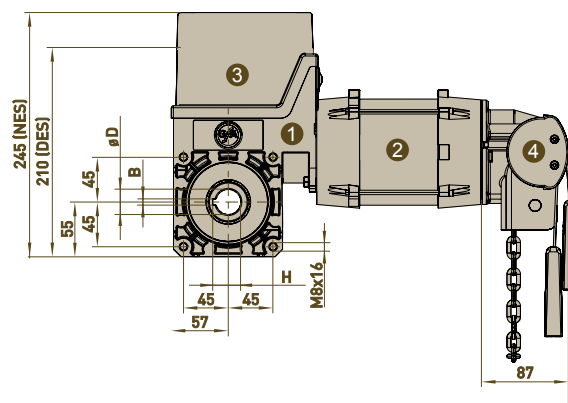


Dimensions:

- 1 Hollow axle / worm wheel drive
- 2 Electromotor
- 3 End stop switch
- 4 Emergency operation

Diameter hollow axle:

D [31.75mm] B [6.35mm] H [34.7mm]



The electromotor is star switched as standard (3 x 400 V + N+ PE). This can be changed to triangular switching (3 x 230 V + PE).

Electromotor SE6.65 DU Dynamic duo

Weight of sectional door max. 300kg = <24m²

| | |
|---|----------------------------|
| Diameter hollow axle | 25,4/31.75 mm |
| Drive belt | 60 Nm |
| Static moment M | 450 Nm |
| Door weight to approx. | 300 kg |
| Drive rpm | 20-65 min -1 |
| Motor power | 0,45 kW |
| Operating voltage | 3 x 400 V |
| Frequency | 50 Hz |
| Nom. power motor | 0,9 A |
| Duty cycle motor | S3-60% ED |
| Power cable / fuse | 5x1,5 ² / 10A t |
| End stop switch range, maximum rotation of the hollow axle | 20 (14*) |
| Permissible temperature range (if different: ask for information) | -5°C / +40°C |
| Continuous noise level | <70 dB(A) |
| Protection class | 54 IP |
| Weight | 16 kg |

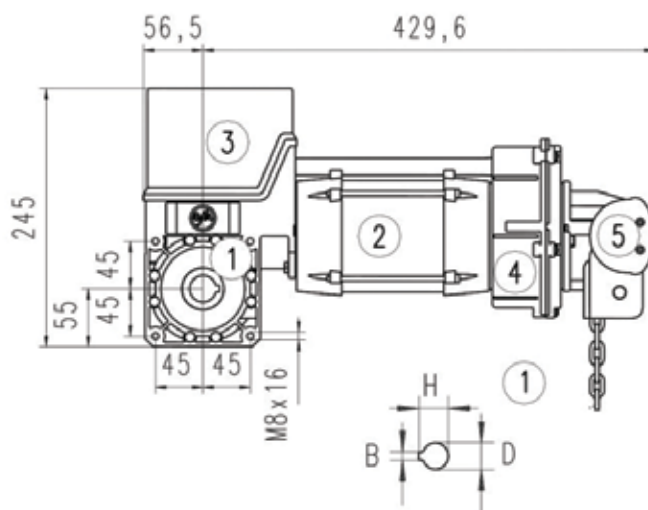


Dimensions:

- 1 Hollow axle / worm wheel drive
- 2 Electromotor
- 3 End stop switch
- 4 Direct - converter DO
- 5 Emergency operation SC (Fast Chain)

Diameter hollow axle:

D [25,4/31.75mm] B [6.35mm] H [28,4/34.7mm]



The Dynamic electromotor can only be star switched (3 x 400 V + PE).

*End stop switch range with a hollow axle diameter of 31.75 mm



Control unit TS 970

The TS 970 is the control unit supplied as standard. This control unit includes the preparation required to add various operating elements.

Technical data Control unit TS 970

| | |
|--|--|
| Dimension of housing | 155mm x 386mm x 90 mm (W x H x D) |
| Rotary current | 3 x 230/400V AC +/- 5%, 50...60 Hz |
| Alternating current | 1 x 230V +/- 5%, 50...60 Hz |
| Drive power with 3 x 400 V AC | max. 3kW |
| Operating power via L1, L2 400 V AC or 230 V AC \pm 10%, 50...60 Hz safety with F1 fuse (1A t) | |
| Safety device for the user | 10A delay |
| Power take-up of approx. 15 VA (without drive and ext. 230 V – user) | |
| External power 1 | 230V via L1 and N |
| Safety with fuse F1 (1A t) | |
| External power 2 | 24 V DC irregular, max. 150 mA loadable, safety via electronic fuse |
| Control inputs | 24V DC / typ. 10 mA |
| Min. signal time for input commands | > 100ms |
| Relay contact | When inductive loads are switched on (e.g. another relay), this must be with freewheeling diodes and in accordance with suppression measures |
| Contact load at 230 V | max. 1A |
| Operating temperature range | +0...+40°C |
| Storage | +0...+50°C |
| Air humidity | Up to 93% non-condensing |
| Vibration | Vibration-free installation, e.g. against a brick wall |
| Protecting class from housing | IP65 |



Short summary of the functions for a TS 970 control unit

Control up to max. 3 kW at 400 V / 3~ with digital **DES** limit switch for a floor setting

Display by 2-digit 7-segment display for

- programming the control
- status-/info/error mode

Mains voltage

- 400 V / 3~ with and without N conductor
- 230 V / 3~
- 230 V / 1~ (for alternating current motors)

Door operation mode

- dead man's opening and closing mode
- automatic opening and dead man's closing mode (without safety edge)
- automatic opening and closing mode (automatic closing mode combined with safety edge)

Automatic recognition and processing of three closing edge evaluations

- 8K2 closer principle
- 1K2 opener principle
- optical safety edge (Fraba system)

Automatic closure

- after a set "open time" of 1 to max. 240 seconds
- the time can be shortened by breaking a light beam on a photocell surveillance unit
- can be broken by a separate switch

Connection for supplying external devices

- 230 V (with mains power 400 V / 3~ with N), load up to 1 A
- 24 V DC, load up to 150 mA

Buttons in the cover of the control box OPEN / STOP / CLOSE

Connection options for extra command devices

- lock emergency stop
- key
- extra safety switch
- external command device Open / Stop / Close
- photocell surveillance unit as object surveillance (Stop + resume opening).
- single-channel impulse transmitter, e.g. pull switch for Open / Close / Stop - resume opening or radio control
- key switch for activating intermediate position
- 1x potential-free relay output (changer), output signal of the extra limit switch for message or connecting a flashing light (warning)

Requirements TS 970 control unit

If the TS 970 control unit is being used in conjunction with an SE6.65 Dynamic duo (motor with frequency regulator), class B RCDs must be provided.

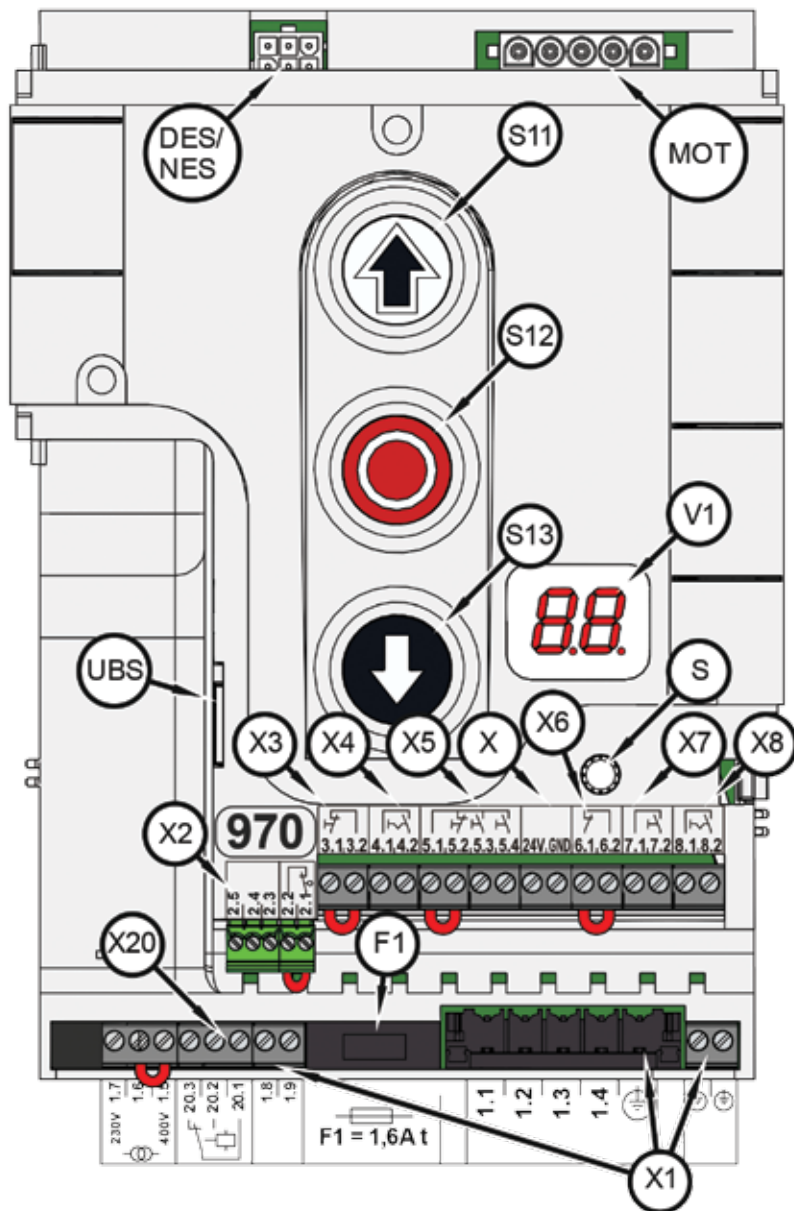
The power circuit-breaker (main switch / CEE - plug) must be accessible and mounted between 0.6 metres and 1.7 metres above the ground.

The control must be protected to all poles with a safety value of max. 10 A per phase against short-circuits and overloads. This will be done by using a 3-pole circuit-breaker with phase power supplies or a 1-pole circuit-breaker with alternating current that is switched on for the control connected to the domestic system.

The connection of the control to the domestic system must be with a properly sized mains isolating device to all poles, compliant with EN 12453. This could be with a plug connection (16A CEE) or a main switch.

Connection options TS 970 Control unit

The TS 970 control unit has digital designations with universal power input.
Each digit corresponds with a specific connection option.



| | |
|---------|---|
| DES/NES | DES or NES connection limit switches |
| F1 | Fuse 1.6 A(T) |
| MOT | Motor connection |
| S | Set button |
| S11 | OPEN push button |
| S12 | STOP push button |
| S13 | DOWN push button |
| UBS | Universal sensor socket command |
| V1 | Display |
| X | 24 V connection, external switches |
| X1 | Mains connection |
| X2 | Safety frames with bridge plug |
| X3 | EMERGENCY STOP switch |
| X4 | Automatic close on/off |
| X5 | External press switch with 3 buttons |
| X6 | Reflection and one-way photocell security |
| X7 | Pull switch / radiographic receiver |
| X8 | Intermediate open position on/off |
| X20 | Potential-free relay contact 1 |



TS 981 Control unit

The TS 981 is supplied as an optional control unit. This control unit includes the widest preparation possible required to add various operating elements.

Technical data Control unit TS 981

| | |
|--|--|
| Dimensions of housing | 190mm x 300mm x 115 mm (W x H x D) |
| Rotary current | 3 x 230/400V AC +/- 5%, 50...60 Hz |
| Alternating current | 1 x 230V +/- 5%, 50...60 Hz |
| Drive power with 3 x 400 V AC | max. 3kW |
| Operating power via L1, L2 400 V AC or 230 V AC \pm 10%, 50...60 Hz safety with F1 fuse (1A t) | |
| Safety device for the user | 10A delay |
| Power take-up of approx. 15 VA (without drive and ext. 230 V - user) | |
| External power 1 | 230V via L1 and N |
| Safety with fuse F1 (1A t) | |
| External power 2 | 24 V DC irregular, max. 150 mA loadable, safety via electronic fuse |
| Control inputs | 24V DC / typ. 10 mA |
| Min. signal time for input commands | > 100ms |
| Relay contact | When inductive loads are switched on (e.g. another relay), this must be with freewheeling diodes and in accordance with suppression measures |
| Contact load at 230 V | max. 1A |
| Operating temperature range | +0...+40°C |
| Storage | +0...+50°C |
| Air humidity | Up to 93% non-condensing |
| Vibration | Vibration-free installation, e.g. against a brick wall |
| Protection class for housing | IP54 (CEE – Plug), IP65 available |



Short summary of the functions for a TS 981 control unit

Control up to max. 3 kW at 400 V / 3~ with digital **DES** limit switch for a floor setting

Display by 2-digit 7-segment display for

- programming the control
- status-/info/error mode

Load and store software updates

Mains voltage

- 400 V / 3~ with and without N conductor
- 230 V / 3~
- 230 V / 1~ (for alternating current motors)

Door operation mode

- dead man's opening and closing mode
- automatic opening and dead man's closing mode (without safety edge)
- automatic opening and closing mode (automatic closing mode combined with safety edge)

Automatic recognition and processing of three closing edge evaluations

- 8K2 closer principle
- 1K2 opener principle
- optical safety edge (Fraba system)

Automatic closure

- after a set "open time" of 1 to max. 240 seconds
- the time can be shortened by breaking a light beam on a photocell surveillance unit
- can be broken by a separate switch

Connection for supplying external devices

- 230 V (with mains power 400 V / 3~ with N), load up to 1 A
- 24 V DC, load up to 150 mA

Buttons in the cover of the control box OPEN / STOP / CLOSE

Connection options for extra command devices

- lock emergency stop
- key
- extra safety switch
- external command device Open / Stop / Close
- photocell surveillance unit as object surveillance (Stop + resume opening).
- single-channel impulse transmitter, e.g. pull switch for Open / Close / Stop - resume opening or radio control
- key switch for activating intermediate position
- 2 x potential-free relay output (changer), output signal of the extra limit switch for message or connecting a flashing light (warning)

Integrated traffic light control for traffic regulation

- one-way traffic
- traffic in both directions

Option of direct connection of RWA function (smoke and heat discharge)

Requirements TS 981 control unit

If the TS 981 control unit is being used in conjunction with an SE6.65 Dynamic duo (motor with frequency regulator), class B RCDs must be provided.

The power circuit-breaker (main switch / CEE - plug) must be accessible and mounted between 0.6 metres and 1.7 metres above the ground.

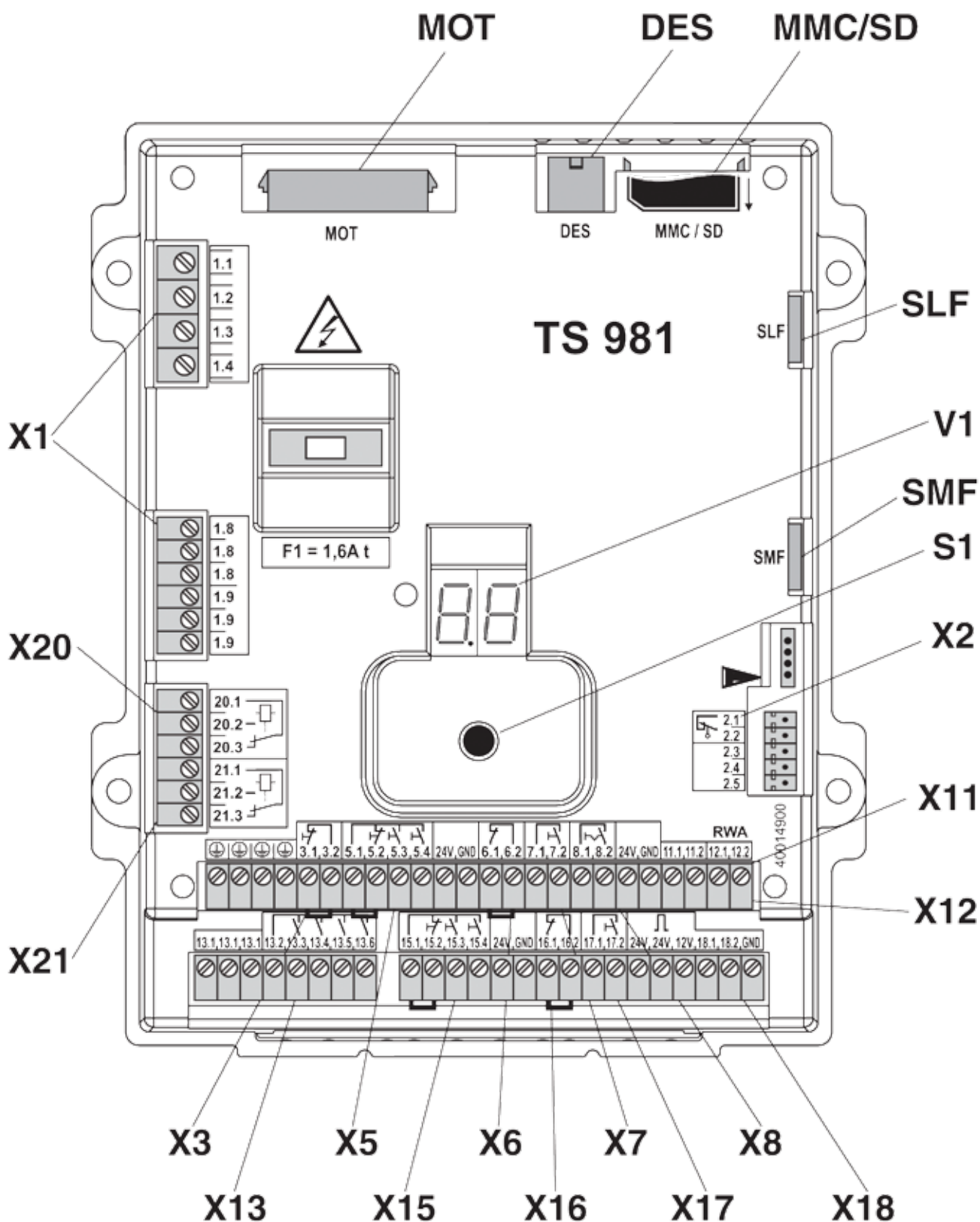
The control must be protected to all poles with a safety value of max. 10 A per phase against short-circuits and overloads. This will be done by using a 3-pole circuit-breaker with phase power supplies or a 1-pole circuit-breaker with alternating current that is switched on for the control connected to the domestic system.

The connection of the control to the domestic system must be with a properly sized mains isolating device to all poles, compliant with EN 12453. This could be with a plug connection (16 A CEE) or a main switch.

Connection options for TS 981 control unit

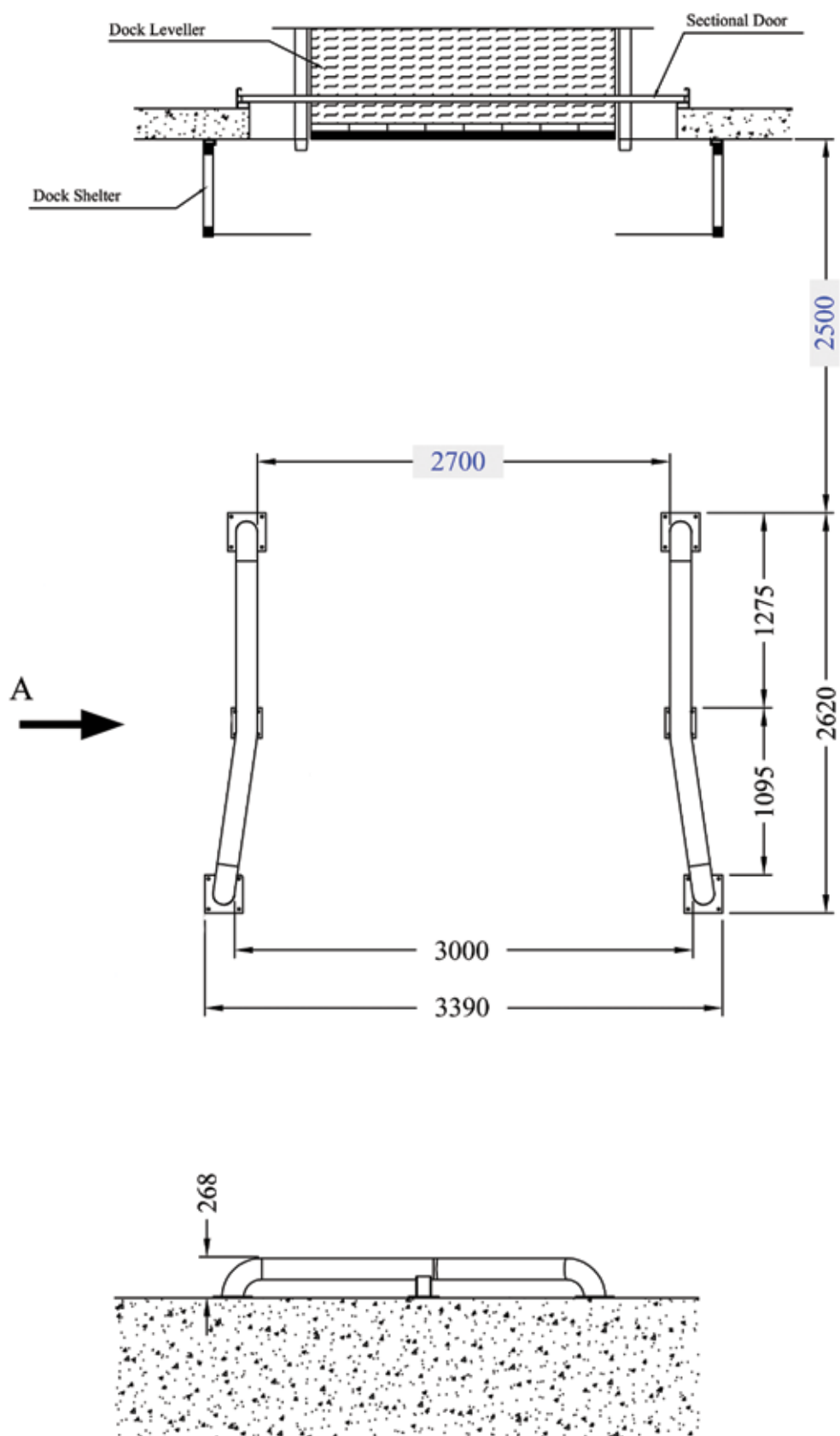
The TS 981 control unit has digital designations with universal power input.

Each digit corresponds with a specific connection option. This control unit is optional and required in underground parking areas, for example, where traffic light regulation is a necessity, several potential free contacts are required or a smoke message needs to be sent.

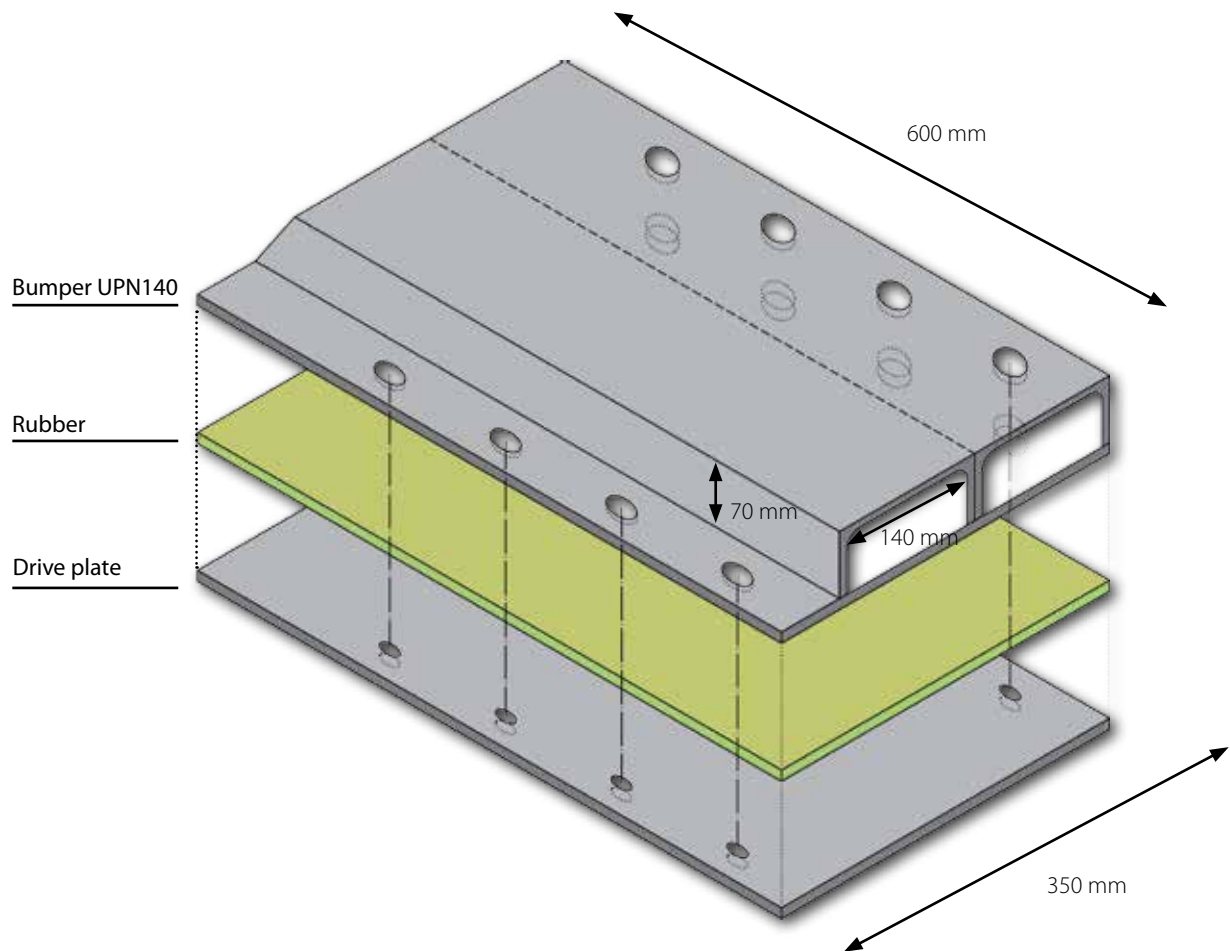


| | |
|--|--|
| X1 | Mains connection and external 230 V supply |
| 1.9 | L1 protected with F1 = 1.6 A |
| 1.8 | N (only for 3 x 400 V, N, PE and 1 x 230 V, N, PE symmetrical coil) |
| X2 | Safety frames with bridge plug |
| X3 | EMERGENCY STOP switch |
| X8 | Key switch |
| X11 | Key switch ON/OFF for automatic timer closure |
| X12 | Smoke and heat discharge function |
| X13 | Traffic light connection 2 x red/green |
| X18 | Retract safety device built in and/or double |
| X20 | Potential-free relay contact 1 |
| X21 | Potential-free relay contact 2 |
| X5 | Three-touch switch / key switch |
| X6 | Reflection photocell safety device / one-way photocell safety device |
| X7 | Pull switch |
| X15 | Three-touch switch / key switch |
| X16 | Reflection photocell safety device / one-way photocell safety device |
| X17 | Pull switch |
| Commands from inside Commands from outside | |
| DES | Connection limit switch |
| MOT | Motor connection |
| MMC/SD | Interface for memory card |
| SLF | Interface for lock function |
| SMF | Interface for status / report function |
| S1 | Set button |
| V1 | 7-segment display |

Wheel guides



Mammoth dock buffer



Available in UPN 140 and UPN 160

Reference

MG Tower in Ghent with industrial doors from L-DOOR



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