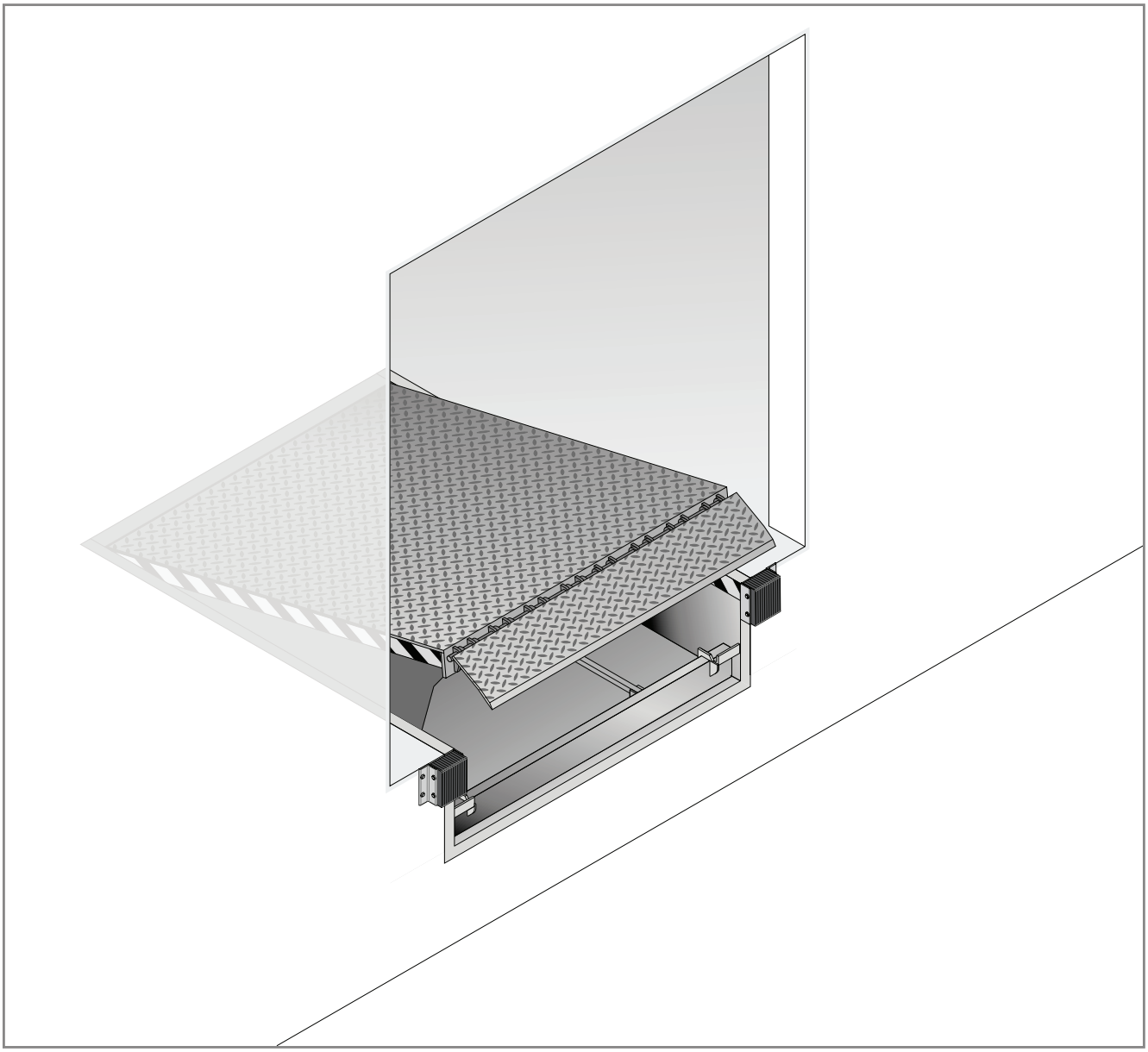


Instructions for fitting, operating and maintenance

HLS2

10000252 / 12.2024

HÖRMANN

Table of contents

1 About these instructions

These instructions are **original operating instructions** which outline procedures that must be followed to install the Hörmann HLS2 dock leveler. This document is not intended to cover all procedures to ensure a safe installation and trouble free operation.

1.1 Applicable documents

▶ In addition to these instructions, the following documents must be observed depending on the scope of delivery:
– Control box operating instructions

1.2 Warnings used

Indicates a danger that can lead to **death or injuries.**

⚠ DANGER

Indicates a danger that immediately leads to death or serious injuries.

⚠ WARNING

Indicates a danger that can lead to death or serious injuries

⚠ CAUTION

Indicates a danger that can lead to minor or moderate injuries

ATTENTION

Indicates a danger that can lead to **damage or destruction of the product.**

2 Safety instructions

⚠ WARNING

Danger of injury in the event of non-observance of these operating instructions
These instructions contain important information on the safe use of the product. Possible dangers are emphasized.

▶ Read through all of the instructions carefully.
▶ Follow all safety instructions provided in this document.
▶ Keep these instructions accessible.

2.1 Intended use

The product is used in industrial applications and serves the following purposes:
- Attaching to loading sites for trucks.
- Use for efficient loading.
- Bridging height differences and distances between the loading area of the vehicle and the loading ramp.
  – Max. permissible inclination angle in accordance with ANSI MH30.1-2022:5%, see page 19 for the maximum grade permissible for material handling equipment.
  – Maximum loading capacity, see Page 5.
  – Maximum leveling with standard sizes, see *Dimensions and effective working range on page 29.*

2.2 Non-intended use

The product is not suitable for the following applications:
- As a lifting platform
- For lifting and lowering goods or persons
- As a location for storing goods or loading equipment
- For operation with the liftgate of the vehicle.

2.3 Qualification of personnel

Only authorized persons may carry out work on the product. Authorized persons are personnel from the operator or manufacturer who have been instructed and trained in this work.
To perform work on the product, the personnel undertaking these tasks must meet certain requirements. The groups of persons are classified as follows:

2.3.1 Operator

The operator is responsible for the building where the product is used. The operator has the following tasks:
- Instructing users.
- Complying with the legal workplace safety rules and regulations.
- Complying with the valid safety, accident prevention and environmental protection regulations.
- Providing and observing documentation.
- Ensuring that the product is always in perfect technical working order.

2.3.2 Specialist personnel

Members of specialist personnel are responsible for the following work:
- Fitting
- Initial start-up
- Maintenance
- Dismantling and disposal

Please observe:
- Work must only be performed by qualified employees who are familiar with the assembly technology as well as the valid safety regulations.
- Fitting includes
  – Mechanical work
  – Welding and casting work, depending on the fitting model
  – Electrotechnical work
- Special work during fitting must only be performed by suitably qualified employees of specialist companies. This includes work on the building statics or ventilation system.
- Electrical installations must only be performed by qualified electricians.

2.3.3 Users

Users are permitted to perform work for operation and maintenance of the product. Requirements for users:
- Instruction on the product by the operator.
- Knowledge of these instructions.
- Good sight and hearing, as well as good judgment and a sense of responsibility.

2.4 General safety instructions

The use of the product is prohibited in the following cases:
- In non-industrial applications
- In case of damages to the product or individual components

▶ In addition to the following notices, safety instructions contained in the individual sections must be followed!

2.5 General safety instructions

The use of the product is prohibited in the following cases:
- In non-industrial applications
- In case of damages to the product or individual components

⚠ WARNING

Danger of injury from spacings and openings in the area of the dock leveler

Spacings and openings in the area of the dock leveler can impair workplace safety. Example:
- – Recesses in the ramp for guiding the hall door

▶ Take appropriate measures, e.g. briefing of personnel or structural protective measures.

ATTENTION

Damage due to liquids

Contact with liquids can cause corrosion and short circuits. As a result components may be damaged.

▶ Avoid contact with liquids:
- – Of energized parts
- – Of the hydraulic power unit, e.g. by ingress through the ventilation filter

▶ Check the dock leveler periodically according to these instructions.

▶ Remove all corrosion and touch up any paint damage.

Damage due to mechanical forces

The dock leveler can be damaged by mechanical forces, e.g. overloading.

▶ Perform a visual inspection for mechanical damage every day.

▶ Commission the repair of all defects immediately.

If damage puts the operational safety of the dock leveler at risk, a specialist must inspect the dock leveler and its operational safety. Use of the dock leveler is not permitted until the repair work has been completed.

Cross traffic is possible only in home position.

▶ Please observe the notices regarding cross traffic, see *Non-operation on page 19.*

⚠ WARNING

Danger of injury by changing the construction

All the components are precisely matched. Changing components or attaching additional components could affect the construction, disable important safety components and lead to serious injuries.

▶ Do not change any parts or the maximum load without consent of the manufacturer!

2.6 Noise protection

Operation of the dock leveler produces different types of noise:
- Short-term noise when the platform is raised and lowered, when the lip is moved and when the dock leveler is returned to the home position.
- Long-term noise during rolling over the dock leveler, depending on the means of transport and cargo. The dock leveler causes a continuous sound level that does not exceed 70 dB(A). The noise can be influenced by the travel speed, type of tires and type of transport packaging.

⚠ WARNING

Health risk due to noise exposure

▶ Measure the actual level of noise exposure on site.

▶ Take appropriate protective measures, such as headphones or ear plugs.

▶ Observe legal regulations pertaining to noise protection.

2.7 Standards and directives

The product complies with all applicable standards and directives. The corresponding marking is attached to the product.

This declaration is not applicable under the following conditions:
- When operating under extreme conditions, e.g.
  - – Temperatures outside the range mentioned in section 13
  - – Strong magnetic fields
  - – In special situations, e.g. if there is a risk of explosion
- Handling of loads which could lead to dangerous situations e.g. molten metal, acids, radioactive materials, particularly fragile loads
- Hazards occurring during transportation, fitting and dismantling
- When fitting into other systems or machines, operation with more than one control box or wirelessly
- Risks caused when driving loading equipment (forklifts, etc.).

In any of these cases an individual risk assessment and conformity procedure in accordance with the respective Safety Directives is required.

3 Scope of delivery

The scope of delivery for the dock leveler comprises:
- Dock leveler
- Control
- Any individual parts supplied separately, depending on the version
- Transport profile with protective flap (1 × per delivery)

All dock levelers are tested and filled with hydraulic oil on delivery.

4 Product description

The HLS2 is a stationary, hydraulically operated dock leveler. The platform is rotatable. The lip of the HLS2 can be folded out.

4.1 Loading capacity

⚠ CAUTION

Damage to dock leveler or personal injury caused by overload

Excessive load can damage the dock leveler or cause tripping hazards if the platform is deflected.

▶ Observe the maximum load.

▶ Please observe the conditions regarding cross traffic, see *Non-operation on page 19.*

Platform and lip have a sufficient cross torsion flexibility to
- Adapt to the tilt of the loading surface during the loading process
- Avoid tripping hazards

The calculation, dimensioning and design comply with the requirements of ANSI MH30.1-2022. The load-bearing capacity indicated on the data label applies to the total weight consisting of:
- Industrial truck including batteries and any attachments
- Load
- Driver

Maximum load
- Rated load according to data label

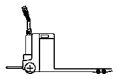
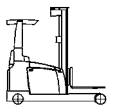
4.1.1 Industrial trucks

Acc. to ANSI MH30.1-2022 the rated capacity shall be 100% of the total gross load at which a dock leveling device will retain its structural integrity for a minimum of 10 years under the following conditions:
- Number of wheels: 4
- Tire width: 8in (200 mm)
- Wheelbase: 50in (1270 mm)
- Front axle track (center to center): 35in. (890 mm)
- Wheel type: rubber, solid
- Footprint: 25in² (1600mm²)
- Distribution of load: 85% front axle
- Direction of travel: perpendicular to dock face
- Percentage of grade of doc leveling device: 5%
- Speed of truck: 4mph (6.4km/h)
- 50,000 nominal roll-over cycles per year (8 vehicles per day; 20 rollover cycler per vehicle; 5 days per week; 52 weeks per year)

These requirements apply to forklifts with air-filled tires or super-elastic tires.

With PU / Vulkollan tires, the contact surface is smaller and the pressure load greater. This can cause permanent deformation (lane grooves) on the platform.

The deformation is permissible when the integrity of the unit is not affected. We recommend the following load limitation to prevent lane grooves:

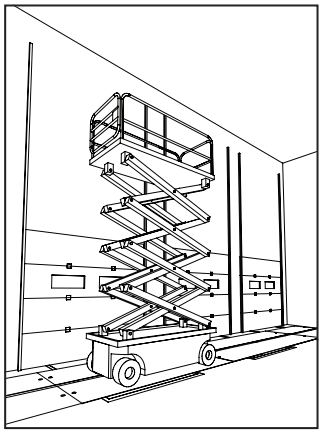
Transport vehicle	Forklift 	Electric lift truck 	Reach lift truck 
Tires	Air-filled / Super-elastic	Tandem rollers made of PU / Vulkollan®	Rollers made of PU / Vulkollan®
Rated load 35,000 lbs			
HLS2	**35,000 lbs**	**30,000 lbs**	**18,000 lbs**
HLS2 Special equipment platform	**35,000 lbs**	**35,000 lbs**	**30,000 lbs**
Rated load 50,000 lbs			
HLS2	**50,000 lbs**	**35,000 lbs**	**30,000 lbs**

4.1.2 Working platforms

If the dock leveler is driven over with mobile working platforms during construction or conversion of the hall:

▶ Make sure you use sufficiently dimensioned driving panels to distribute the point load and prevent deformation.

▶ Do not exceed the maximum loading capacity as specified on the data label.



4.1.3 Changes to the operating conditions

When changing the operating conditions:

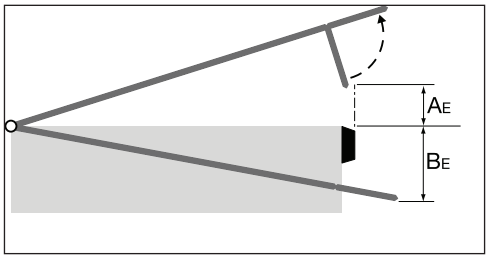
▶ Take any potential influences on the loading capacity of the dock leveler into consideration.

▶ Coordinate any necessary adjustments with the manufacturer or supplier of the dock leveler.

Changes to the operating conditions include:
- The use of other, especially heavier, transport equipment.
- Docking of other vehicles.

4.2 Effective working range

The dock leveler can be raised above and lowered below the ramp level.



The working range will deviate from the information in the tables if the installation height, length or rated load is different. If necessary, please ask the supplier or manufacturer for this information.

HLS2		Leveling / Effective working range With 4” (100mm) buffers	
Type	**Ordering length**	**A_E**	**B_E**
68 / 78	8’	10.60” (270 mm)	6.50” (165 mm)
610 / 710	10’	13.60” (345 mm)	6.30” (160 mm)

4.3 Temperature

As standard, the dock leveler uses a hydraulic oil designed for a temperature range of +14°F to +122°F (-10°C to +50°C).For lower temperatures, adjustments must be made. For temperatures below +14°F (-10°C), a suitable type of hydraulic oil should be used. The dock leveler can be ordered so that it already contains the proper type of oil for a temperature range of –13°F to +122°F (-25°C to +50°C) on delivery.

The temperature information relates to the hydraulic unit. Depending on the situation, lower or higher ambient temperatures will not have an adverse impact.

4.4 Seals

The dock leveler is optionally equipped with:

- Gap sealing: plastic profiles with rubber or brush seals to prevent drafts.

4.5 Hydraulic system

An electro-hydraulic system with 2 lifting cylinders and a lip cylinder operates the dock leveler.

4.6 Safety components

To prevent situations in which personnel can be injured, the dock leveler is equipped with safety devices.

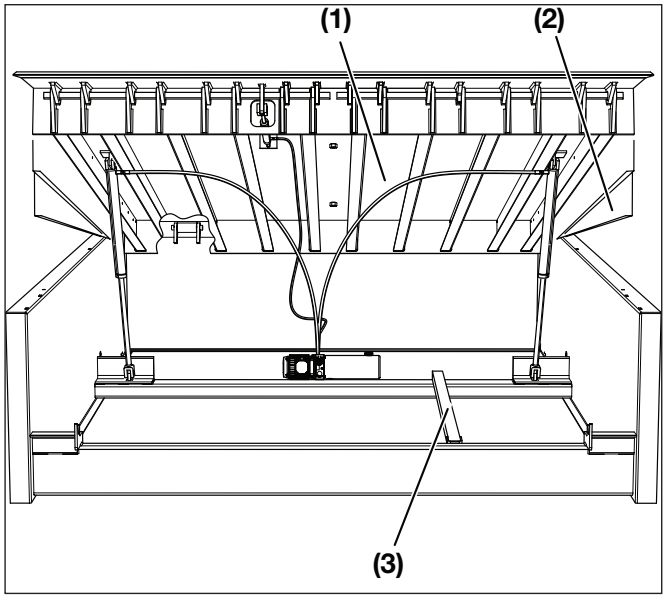


Figure: HLS2 frame and box models

(1) Pedestrian and driving surface, see *4.6.7*
(2) Side panel, foot guard, see *4.6.2*
(3) Maintenance support, see *4.6.5*

4.6.1 Emergency stop and restart inhibition

Our Advanced Control Boxes are equipped with an emergency stop function. The emergency stop function triggers the restart inhibition in the control. All movement is blocked once the electrical supply is interrupted or the emergency stop switch is actuated. This prevents the platform from falling.

Note: The emergency button is only available with our Advanced Control Box.

⚠ WARNING

Danger of injury and damage if the dock leveler is loaded after emergency stop.
If a vehicle rolls over the dock leveler while the restart inhibition is activated, the platform will drop. The construction and hydraulic system may be damaged. This could result in injuries.

- ▶ Eliminate the cause that triggered the emergency stop.
- ▶ Press the *RAISE* button to make the dock leveler ready for operation again.

⚠ WARNING

Danger of injury and damage if the dock leveler is operated using the main switch.
Operating the dock leveler with the main switch can cause tripping and damage to the construction.
- ▶ Never use the main switch to operate the dock leveler.
- ▶ Only operate the main switch in case of an emergency and for inspection and maintenance work.

⚠ WARNING

Injury and possible death may occur if performing work on or around the dock leveler without following proper Lock out Tag out Procedures!
- ▶ Always lockout and tagout all power sources before performing and work on or around the dock leveler according to OSHA regulations and approved local electrical codes.

4.6.2 Foot guard

The dock leveler is equipped with fixed and, if required, movable side panels. The side panels prevent feet from being trapped between the hall floor and dock leveler.

4.6.3 Automatic safety equipment

Each lifting cylinder is equipped with a hose safety device. The hose safety device prevents unintended, hazardous lowering of the platform carrying a load, e.g. if a truck drives away unexpectedly.

4.6.4 Voltages

The main voltage required for the unit is stated on the product label. Depending on the voltage type, the control voltage is always 24V DC; see the control panel or separate documentation.

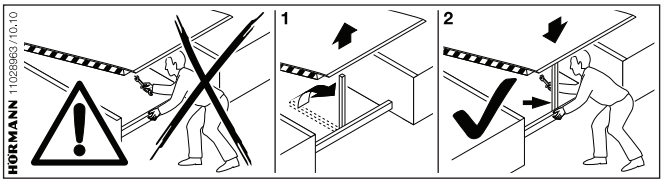
4.6.5 Maintenance supports

The maintenance support prevents the platform from lowering. The hinged lip remains movable on the HLS2.

The sticker below, located on the front beam, contains a clear reference to this safety device.

Before all work under the platform, such as maintenance and repair work:

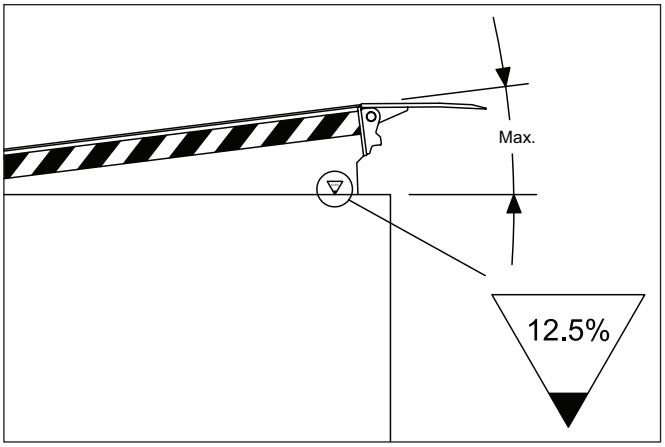
- ▶ Position the maintenance support to securely support the platform, see *on page 19*.



4.6.6 Safety marking

The side edges below the platform are labeled with yellow and black markings. They are visible when the dock leveler is raised. Side plates of the frame construction are also equipped with safety markings. They are visible when the dock leveler is lowered. The pit is equipped with safety marks on the side if the platform does not have side plates.

HLS2 dock levelers come with a sticker on the side that indicates when the maximum gradient of 12.5 % has been reached.



4.6.7 Pedestrian and driving surface

ATTENTION

Damage caused by aggressive agents
Aggressive agents on the dock leveler can cause corrosion and damage.
- ▶ Do not use any aggressive cleaning agents or salt.

The surfaces of the platform and lip are designed as running plates to prevent slipping.
- ▶ Avoid increased risk of slipping due to moisture or black ice: Keep the pedestrian and driving surface dry and clean.

4.6.8 Bumpers (included with the levelers)

- ▶ Protect the ramp and vehicles with suitable bumpers. Special measures may be required for impact forces greater than 56,000 lbf. Please contact the supplier or manufacturer.

Note: Laminated bumpers are included. Angle/flat is supplied with each levelers.

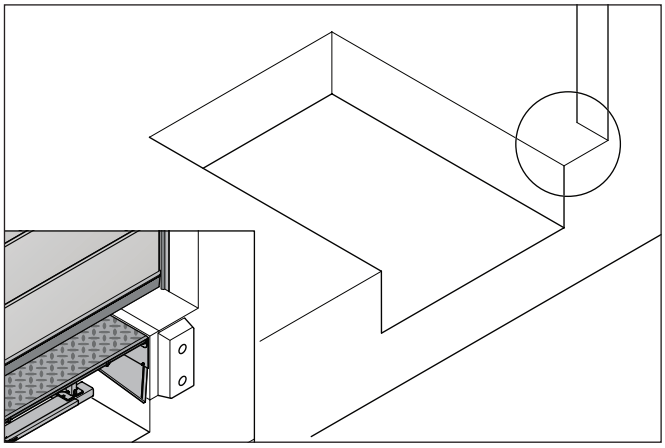
5 Fitting prerequisites

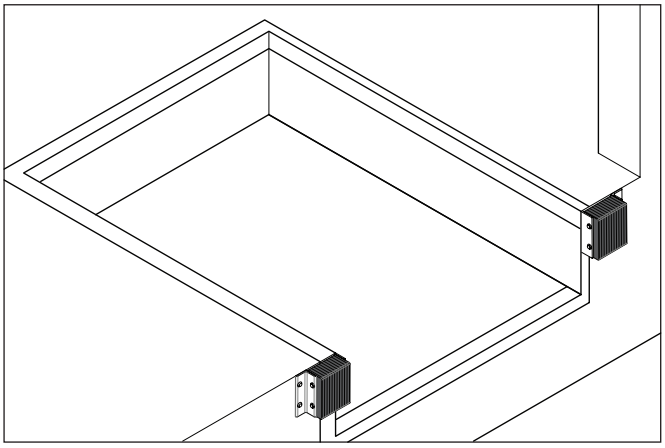
5.1 Pit shapes

Various pit shapes are possible depending on the door guide:

Door guided down onto the dock leveler

The door closes on the dock leveler platform at the front. This door guide does not have any effects on the pit version.





NOTICE:
The following figures in these instructions do not take into account the extension and adjustment of the pit for:

– The door guide in front of the dock leveler

Depending on the fitting model, the dock leveler is suitable for the following fitting methods:

- In a prepared pit in the building floor
  – Pit model P for fitting by welding

5.2 Requirements for the pit

The design of the pit depends on the fitting model, see data label or delivery note.

To ensure long-term proper functioning, the pit must be designed as follows:

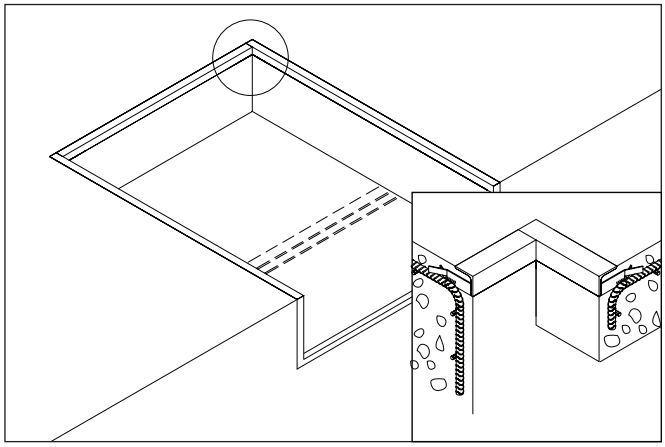
- In accordance with the manufacturer's planning drawings for the respective fitting model
- Dimensionally accurate and at right angles on all sides
- Sufficiently stable in order to withstand all common or infrequently occurring forces without damage.

ATTENTION

Danger of breaking out caused by insufficient fixing
With insufficient fixing, the pit cannot withstand the load forces. The dock leveler will break away. When the automatic safety equipment is activated, the forces are particularly high. Example: A truck drives away while the dock leveler is still in operation.

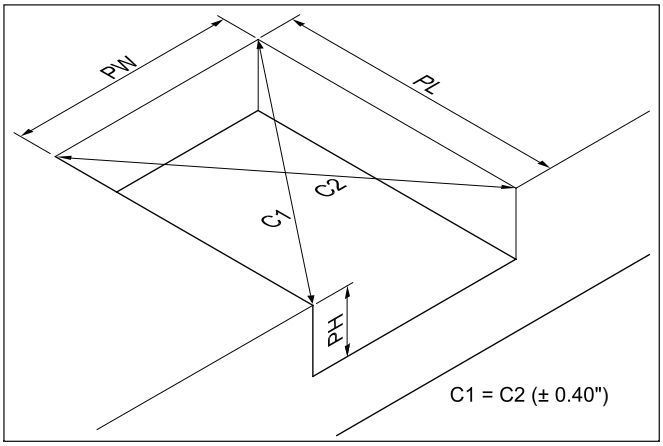
▶ Provide for proper connection to the building structure, especially in areas where load forces occur.

For pit model P



5.2.1 Checking the pit properties to ensure all dimensions are squared

Pit dimension verification:



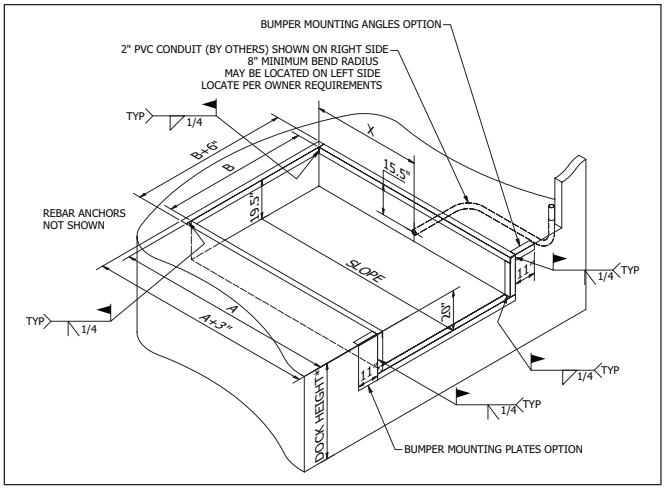
5.3 Requirements for the connection

▶ Make sure that the following requirements are fulfilled:

- Mains connection based on the requirements of the dock leveler
- Suitable cables and fuses
- UPVC tube for laying the cable

5.4 Pit dimensions

Verify your pit dimensions according to model purchased as per dimensions listed below.



* Refer to architectural drawings dimensions -0 / + ¼”
Surfaces plumb and square ± ¼”

Model	A (in)	B (in)	X (in)
HLS2-P 68 - 35	87	74	36
HLS2-P 68 - 50	87	74	36
HLS2-P 610 - 35	111	74	48
HLS2-P 610 - 50	111	74	48
HLS2-P 78 - 35	87	85	36
HLS2-P 78 - 50	87	85	36
HLS2-P 710 - 35	111	85	48
HLS2-P 710 - 50	111	85	48

6 Fitting

The dock leveler may only be fitted if the requirements for the fitting site are fulfilled.

NOTICE:

Deviations from the pit shape shown are possible. The figures do not consider extension and adaptation of the pit for guiding the door in front of the dock leveler.

6.1 Safety instructions for fitting

⚠ WARNING

Danger of injury in the event of non-observance of these fitting instructions.
This section contains important information on the safe fitting of the dock leveler.

▶ Before starting fitting work, carefully read through this section.
▶ Follow all safety instructions.
▶ Please observe all applicable local construction and safety regulations!
▶ Perform the fitting as described.

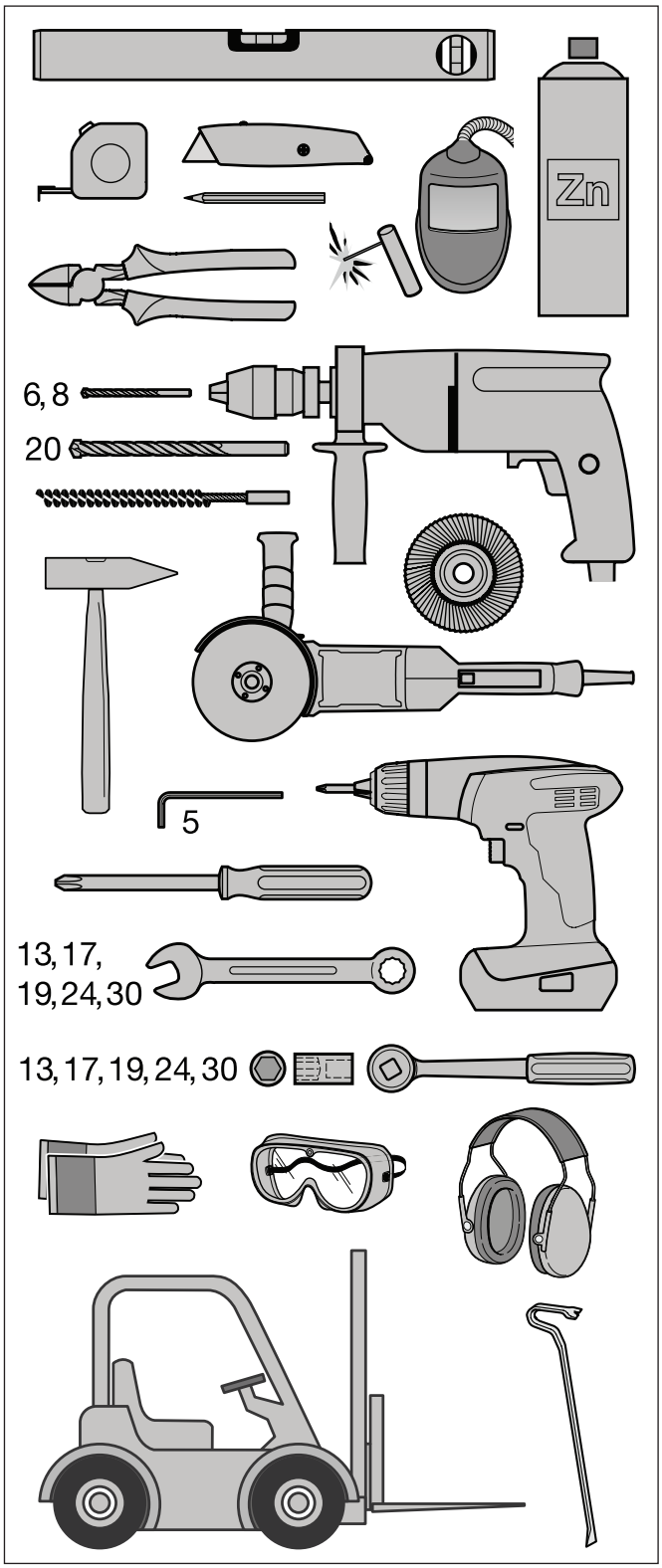
Fitting must only be carried out by qualified specialist personnel, see *Specialist personnel on page 3*.

Electrotechnical work must only be performed by qualified electricians, see *Specialist personnel on page 3*.

▶ Ensure that the following conditions are met when performing fitting work:

- The working area is largely cordoned off.
- The dock leveler is undamaged and in a proper state.
- Cables and hoses are not kinked, squeezed or damaged.

6.2 Required tools



▶ Put together the required tools.

6.3 Unloading

▶ Choose an unloading method according to the weight of the dock leveler. See data label for weight.

▶ Please contact your supplier if there is any deformation or damage.

▶ Touch up minor paint or galvanizing damage only after fitting has been completed.

ATTENTION

Damage due to crashes

The base frame must not deform; otherwise problems may arise during operation

▶ Always keep the dock leveler horizontal. Make sure that the dock leveler is not involved in crashes and cannot fall.

▶ Always unload only one dock leveler at a time.

⚠ DANGER

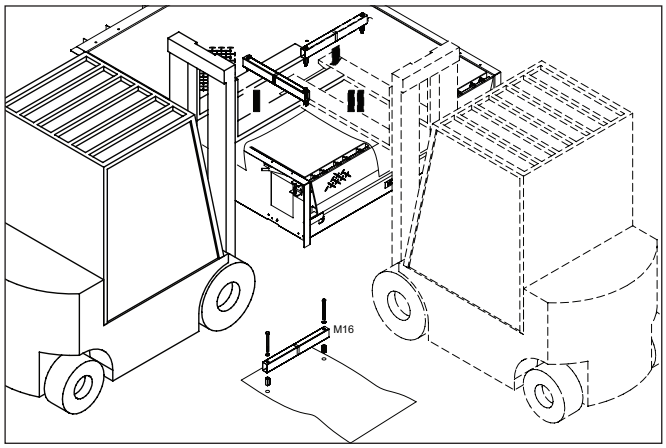
Danger of injury from falling dock leveler

▶ Make sure the transport aids are securely fastened to prevent the dock leveler from falling.

▶ Do not stand underneath the dock leveler!

The dock leveler is prepared for 2 unloading options.

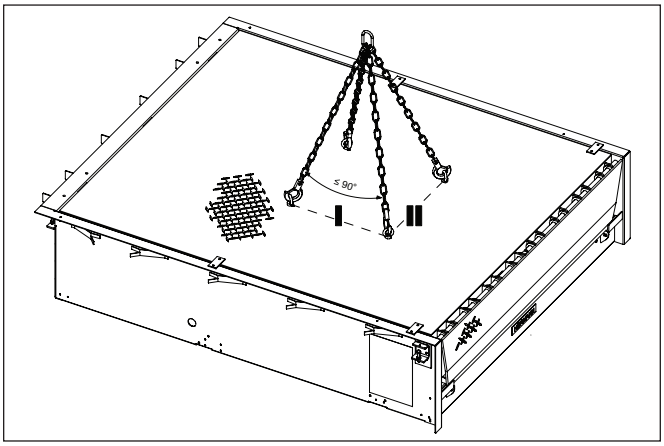
With forklift:



▶ Screw the provided transport profile to the protective flap on the platform.

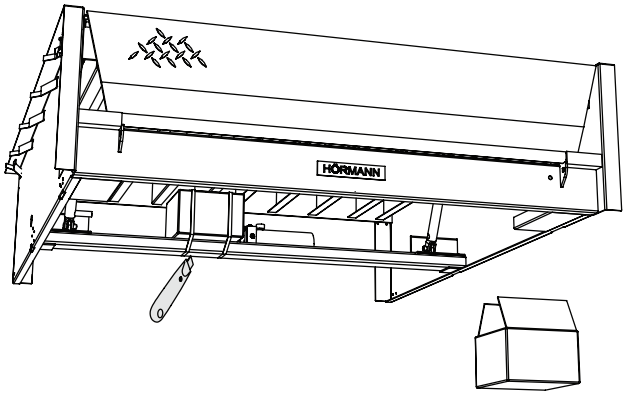
▶ Never lift more than one dock leveler at a time.

With crane:



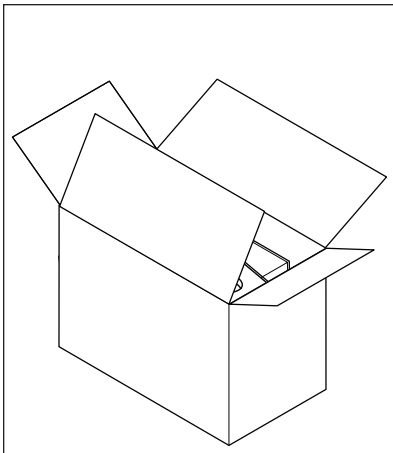
▶ Screw 4 lifting lugs M16 X 1.5 (not supplied) completely into the nuts on the platform.

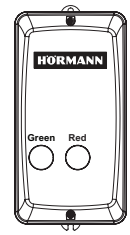
The crane can pull up the dock leveler by chains (not included) connected to the lifting lugs and transport it. Lifting straps are included in the scope of delivery for very heavy dock levelers (own weight over 4400 lbs).



Note: Control box and bumpers may be shipped on a separate pallet.

▶ First remove the box with the control box.



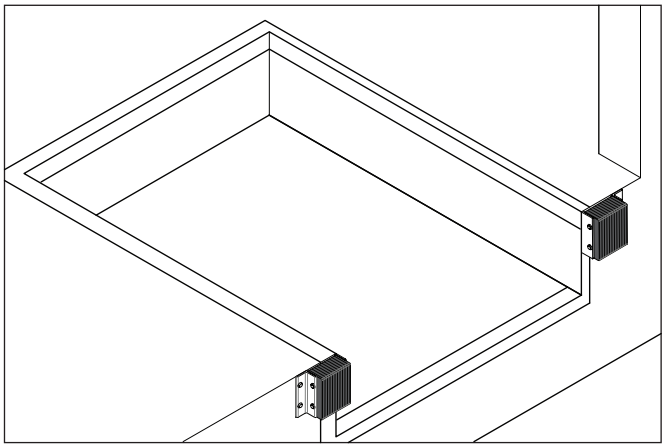


Basic control box

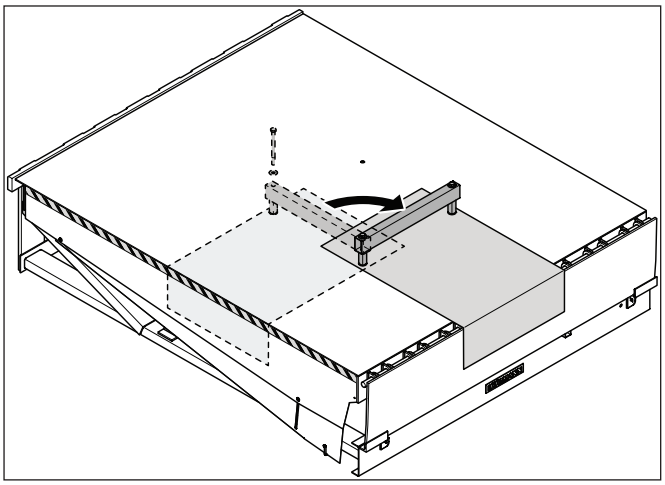
Advanced control box

The box also contains further components in addition to the control box, depending on the equipment.

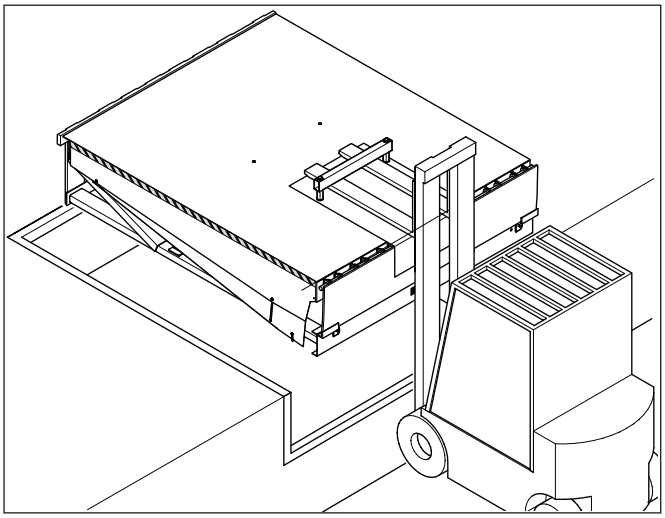
6.4 Fitting pit model P



6.4.1 Set-up



▶ Adjust the position of the transport profile to the required position if necessary.



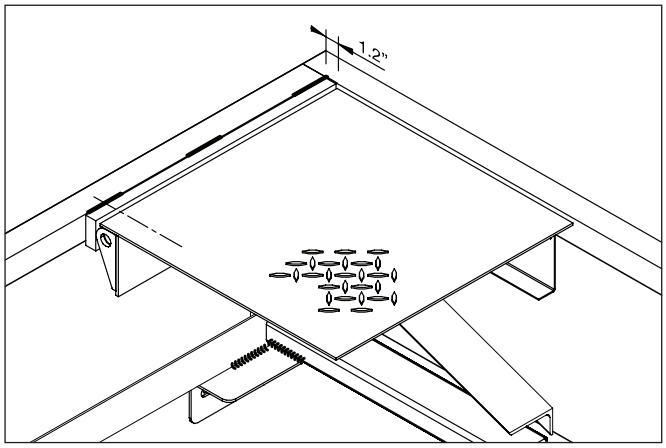
▶ Move the dock leveler into the pit.

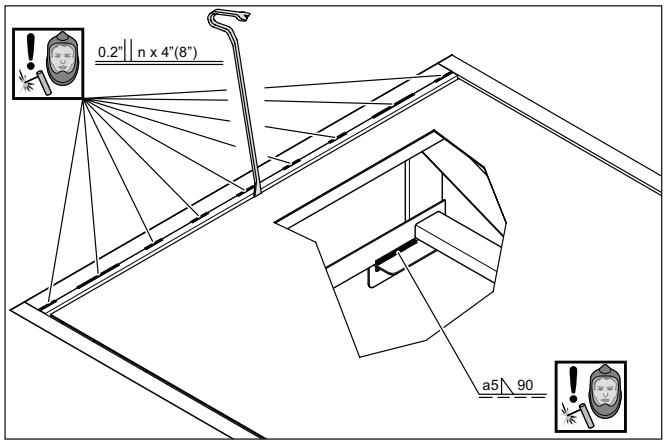
The platform must be on the same level as the ramp. The longitudinal grooves between platform and recess must be the same width on both sides, approx. 10 – 18 mm (3/8 - 11/16in.).

6.4.2 Welding

The dock leveler comes with cut-outs at the rear that show the exact position and length of the welding seams.

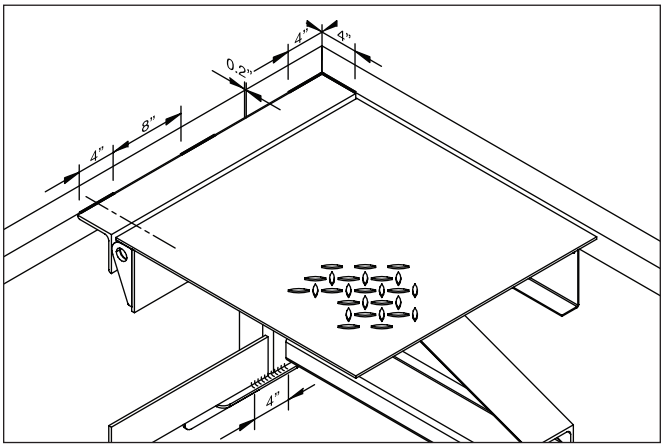
Note: The cut-outs at the rear do not apply to the 20” lip solution.





– Weld the dock leveler on the rear at the indicated points. Make sure the connection is correct and flat. If necessary, push the dock leveler back into the pit using a forklift.

If the dock leveler has an edge bracket on the back instead of flat steel, the following information applies to the welding seams:



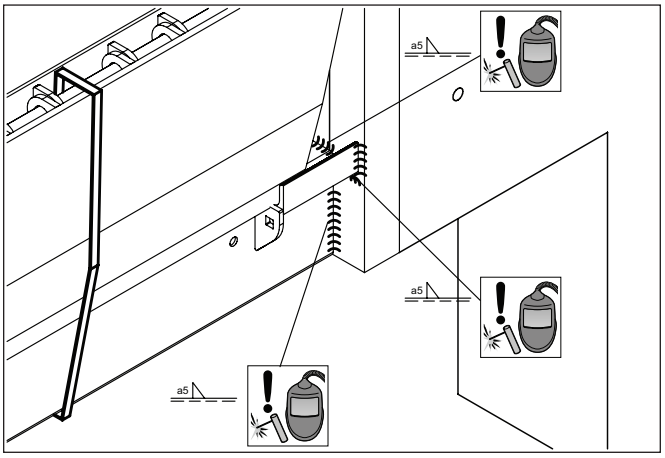
Number of welding segments:

Ordering Nominal width	6'0"	7'0"
Number n_1	8	10

*See data label

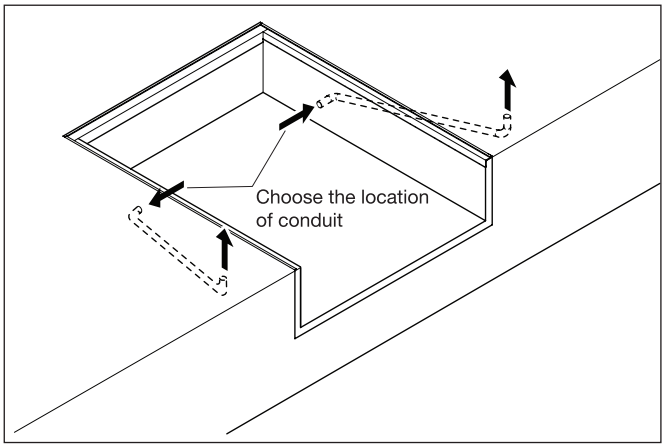
NOTICE
Always weld at the hinges and corners! The distance between the welding seams on the rear must not exceed 200 mm (7-7/8 in.).

HLS2



– Weld the front beam and the lip keeper, if applicable, at the indicated points. If the pit is too wide for the front beam, fill the spacing with steel plates or strips.

NOTICE
Welding the underside of the front beam is not necessary.



6.5 Fitting combined fitting models

To fit combined fitting models, e.g. side fitting by welding and rear fitting by casting, the following applies:

- Follow the fitting instructions for the respective fitting models to make the structural connection on the front or side and rear.

6.6 Electrical connection

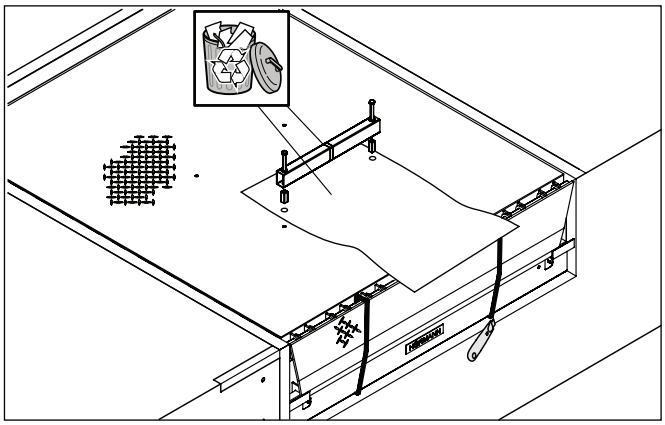
The electric motor is pre-wired and you only need to land the wires inside the control box and follow electrical instruction listed on manual for the type of control box that you purchased.

7 Initial start-up

Initial start-up may only be carried out by qualified specialist personnel, see Specialist personnel *on page 3*.

7.1 Aids

Fitting model P



▶ HLS2: Remove the transport profile and transport safety devices.

7.2 Bumpers

ATTENTION

Damage due to impact forces
Impact forces can damage the building structure, the vehicle and the dock leveler. Transfer of impact forces to the dock leveler can affect the stability, functionality and the fixing of the dock leveler.

- ▶ Install sufficiently dimensioned bumpers.
- ▶ Observe the transmission of the impact forces to the building structure.
- ▶ In case of a protruding dock leveler frame, fill in the connection surface of the bumper.

The depth of the bumpers influences the distance between the vehicle and the dock leveler. The depth of the bumpers influences the distance between the vehicle and the dock leveler. A greater bumper projection might be required for driveways with slope or other condition. Consult factory.

Hörmann bumpers and fixing materials as well as the planning specifications for the pit version are designed to resist impact forces up to 56,000 lbf.

▶ In case of higher impact forces, please contact the supplier or manufacturer.

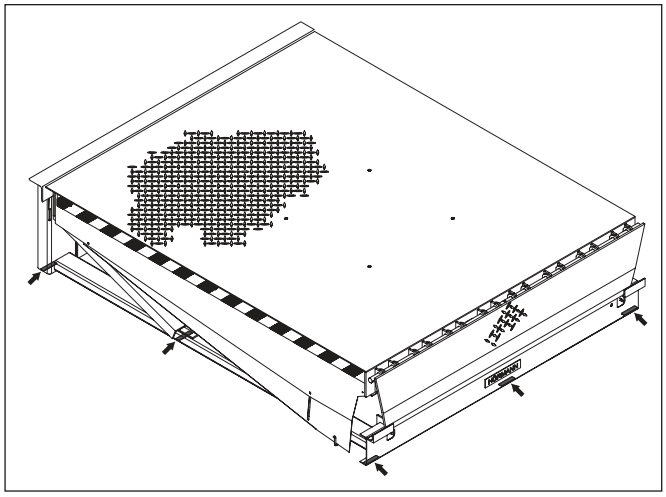
7.3 Check

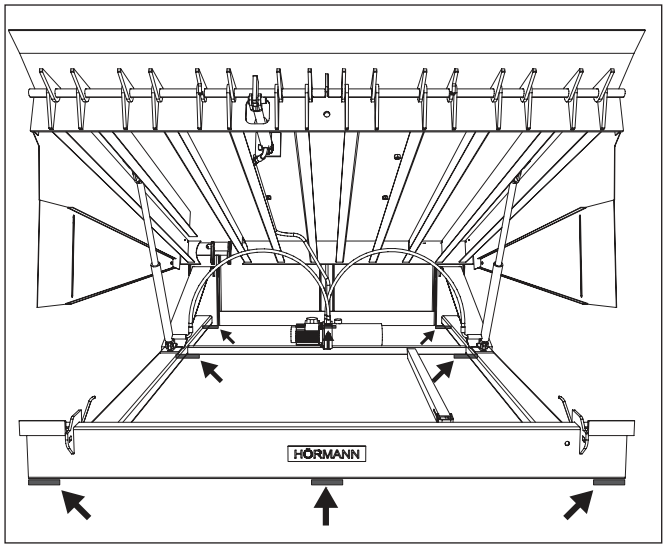
- ▶ Make sure that the platform is level with the ramp.
- ▶ Conduct a test run. Observe the separate instructions for the control.
- ▶ Make sure the dock leveler runs evenly and smoothly.
- ▶ Check the safety equipment.
- ▶ Set the auto-return time of the auto-return function. Follow the documentation for the control.

  Note: Auto-return applies only to levelers with advanced control box
- ▶ Make sure leveler is installed leveled. Add shim if needed.

7.4 Shim placement

Place shims as needed / required.





8 Operation

8.1 Safety instructions for operation

⚠ WARNING

Danger of injury in the event of non-observance of these operating instructions.
This section contains important information on the safe operation of the dock leveler.
- ▶ Before operation, carefully read through this section.
- ▶ Follow all safety instructions.
- ▶ Please observe all applicable local safety regulations!
- ▶ Observe the instructions in the documentation for the control.

Operation must be carried out by qualified specialist personnel, see *Specialist personnel on page 3.*

⚠ WARNING

Danger of injury from tripping or falling.
Careless behavior can lead to persons tripping or falling from the dock leveler.
- ▶ Move carefully on the dock leveler. Pay particular attention to:
  - – Backward movements
  - – Angled position of the platform
  - – In situations where the door is guided in front of the dock leveler: side clearance in the front area

⚠ WARNING

Danger of injury and damage if the dock leveler is operated using the main switch.
Operating the dock leveler with the main switch can cause tripping and damage to the construction.
- ▶ Never use the main switch to operate the dock leveler.
- ▶ Use the main switch only in case of an emergency and for inspection and maintenance work.

⚠ WARNING

Danger of injury during incorrect dock leveler operation.
Persons, body parts or objects may be crushed, trapped or otherwise injured when the dock leveler is operated.
- ▶ Only use the dock leveler if it is in good condition.
- ▶ Always ensure the following before and during operation:
  - – No persons or objects may be on the platform and in the area of travel of the dock leveler.
  - – The dock leveler must not impact any body parts or other objects.
- ▶ In an emergency, press the E-stop, see Electrical Manual for the instruction on how to use the emergency button.

- ▶ Ensure sufficient lighting and a clear view when operating the dock leveler.

ATTENTION

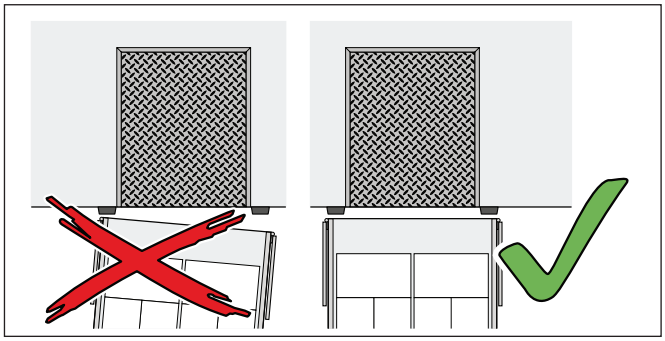
Danger of damage caused by exceeding the working range.
Cushioning of the vehicle during loading will also cause the dock leveler to move upwards or downwards. If the dock leveler is already positioned at the highest or lowest level, the maximum working range may be exceeded and the dock leveler damaged.

▶ Do not start operating the dock leveler at the highest or lowest level.

8.1.1 Docking as specified

Vehicles must be docked in such a way that the lip of the dock leveler can be safely positioned:

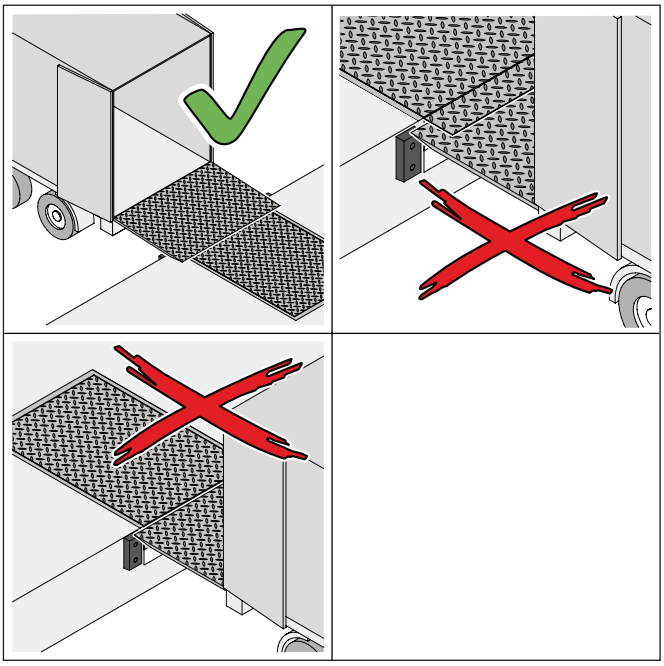
– Evenly over the full width
– Sufficiently deep

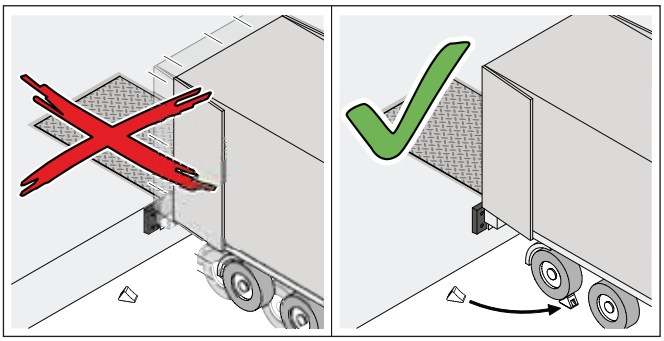


▶ Make sure that vehicles dock straight.

A vehicle is properly docked if there is only a small gap left before contacting the bumpers. Direct contact between the vehicle and the bumpers can cause damage to the bumpers and the vehicle. Local conditions may require larger distances.

▶ Make sure that the vehicles are always at the right distance from the dock leveler. Observe the working range and the correct overlap of the lip.





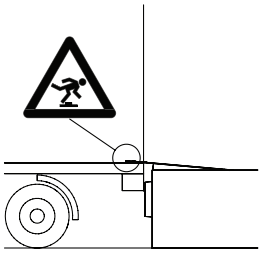
▶ Make sure the vehicle is secured against rolling away!

8.1.2 Safe lip positioning

ATTENTION

Danger of injury and damage with too small or too large bearing surfaces.
Too small bearing surfaces may lead to falls. Loading processes cause movements in which the lip may slip from the loading surface.

Too large bearing surfaces may lead to
- Tripping hazards if loading above level
- Damage to the lip, platform and guides



- ▶ Make sure the full width of the lip is resting on the vehicle loading surface: at least 100 mm (4 in.), but no more than 150 mm (6 in.).
- ▶ Possible adjustments to improve support: vehicle height or distance between the loading surface and the dock leveler.

8.2 Positioning the dock leveler

- ▶ Open the loading ramp door completely, if available.
- ▶ Make sure that no persons or objects are on the platform!

HLS2

1. Press the *RAISE* button. Keep the button pressed. The platform will move upwards. The lip unfolds at the highest position.
2. Release the button. The lip is lowered down to the loading surface of the truck.

8.3 Loading and unloading

▶ Make sure that the following prerequisites are fulfilled every time the dock leveler is used:

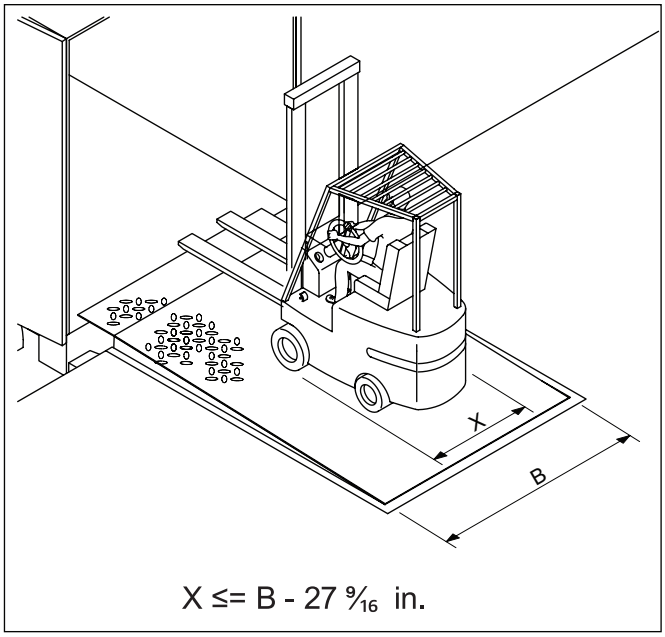
– Compliance with the maximum loading capacity as specified on the data label (rated load)

– Only use suitable, safe and permissible transport equipment

– Comply with the maximum inclination of 12.5%, taking the limitations depending on the type and transport equipment into account, see *8.3.1*

– Max. speed 6 mph

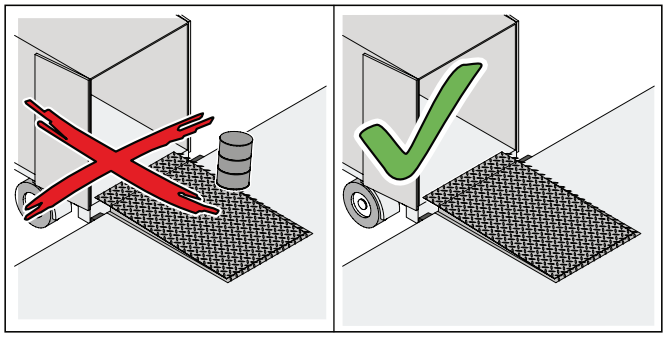
– Maximum track width (X) = platform width (B) - 27 9⁄16 in.



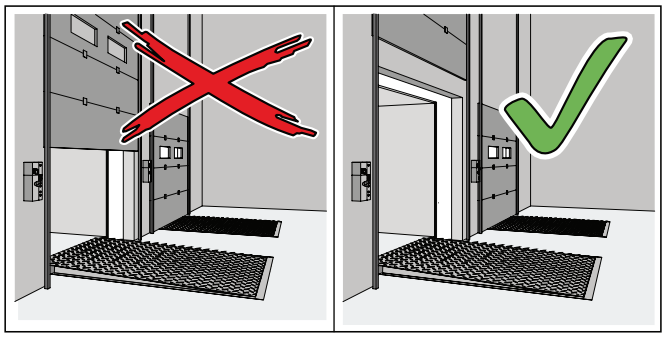
For the levelers 6 ft and 7 ft wide:
Platform width (B) = 74” for the nominal 6’0” wide
Platform width (B) = 85” for the nominal 7’0” wide

Examples:
Max. track width (X) = 74 - 27 9⁄16 = 46 7⁄16”
Max. track width (X) = 85 - 27 9⁄16 = 57 7⁄16”

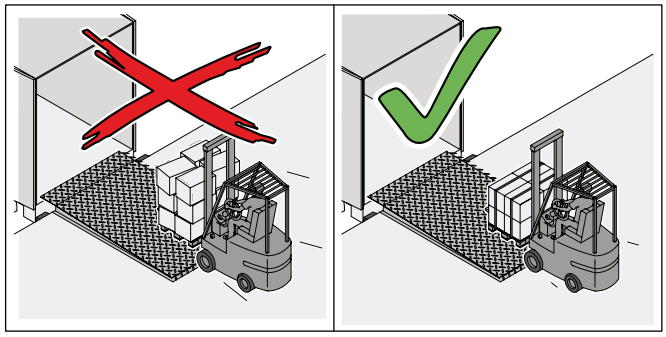
– No persons or objects in the dock leveler’s area of travel



– Goods are protected from slipping and falling, especially large, unsteady or dangerous goods



– Door fully opened



▶ Drive the transport equipment centered onto the platform.

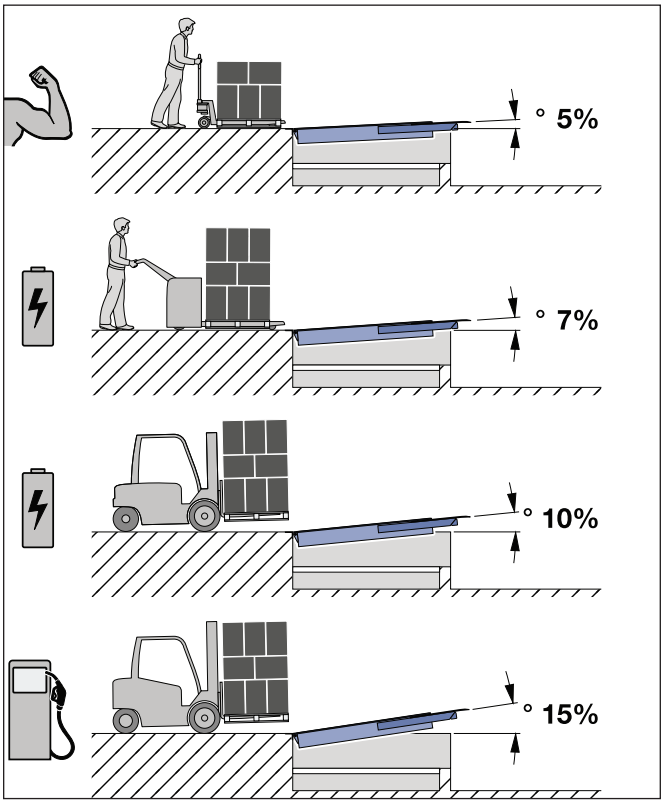
▶ Ensure that the underside of the transport equipment as well as the cargo do not contact the dock leveler.

8.3.1 Inclination

The following specifications apply to the highest and lowest operating position.

Maximum inclination in accordance with ANSI MH30.1-2022: 5%.

Max. inclination depending on type and transport equipment:



8.4 Returning to home position

Auto return HLS2

- ▶ Only available with advanced control boxes.
- ▶ After use, return the dock leveler to its home position immediately:
  - **a.** Make sure that no persons are in the loading area!
  - **b.** Briefly press the auto-return button. The dock leveler will automatically move into the home position.

Note: For Basic Control box without Auto Return feature, push the *RAISE* button consistently until the leveler reaches the higher height and lip folds back. Then remove your finger from the *RAISE* button and the leveler should fall into its storage position.

9 Non-operation

- ▶ When not in use, make sure that the dock leveler is in home position.

8.1 Home position

HLS2: The hinged lip is completely folded in and engaged. The platform and hall floor are at the same height.

⚠ CAUTION

Damage to dock leveler or personal injury caused by overload

Excessive load can damage the dock leveler or cause tripping hazards if the platform is deflected.

- ▶ Observe the maximum load, see *Maximum load on page 5.*

9.2 Cross traffic

Cross traffic is possible under the following conditions:

- Dock leveler in home position.
- Maximum load observed.

10 Maintenance

⚠ WARNING

Danger of injury when working below the platform.
When working below the platform, persons, body parts or objects may be crushed or jammed.

- ▶ Before carrying out any work, put the maintenance support into the right position so that the platform is safely supported.

Positioning the maintenance support

1. Press the *RAISE* button.
2. Position the maintenance s.upport.
3. Turn OFF power.

After work is completed

4. Return the maintenance support to its original position.
5. Turn ON power.
6. To make the dock leveler ready for operation again after interrupting the electrical supply, press the *RAISE* button
7. Return the dock leveler to the home position, see *Returning to home position on page 19*.

10.1 Cleaning and care

ATTENTION

Damage caused by aggressive agents
Use of aggressive cleaning agents or road salt on the pedestrian and driving surface may lead to corrosion and damage.

- ▶ Do not use any aggressive cleaning agents or road salt.

Waste and dirt can impair the function of the dock leveler:

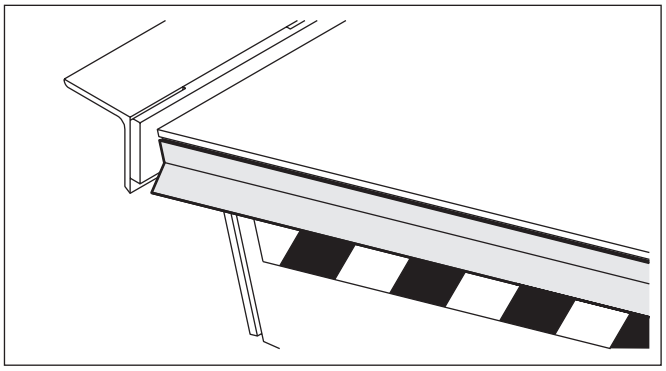
- ▶ Keep the platform hinges and area below the platform clean.

Water and ice can cause an increased risk of slipping.

- ▶ Keep all pedestrian and driving surfaces dry and clean.

With corresponding equipment: Dirt can cause damage to the gap sealing.

- ▶ Keep the gap sealing between the platform and frame / edge of the pit clean at all times.



10.2 Inspection and maintenance

⚠ WARNING

Danger of injury in the event of non-observance of these inspection and maintenance instructions.
This section contains important information on the correct inspection and maintenance of the dock leveler. In case of insufficient inspection and maintenance important safety components may fail or be defective.

- ▶ Before starting maintenance work, carefully read through this section.
- ▶ Follow all safety instructions.
- ▶ Carry out inspection and maintenance at the specified intervals.
- ▶ Commission the repair of all defects immediately.

If damage puts the operational safety of the dock leveler at risk, a specialist must inspect the dock leveler and its operational safety. Use of the dock leveler is not permitted until the repair work has been completed.

Inspection and maintenance work must only be performed by qualified specialist personnel, see *Specialist personnel on page 3*.

⚠ WARNING

Danger of injury during inspection and maintenance
Persons, body parts or objects may be crushed or jammed by the dock leveler during inspection and maintenance work.

- ▶ Before carrying out maintenance work, put the maintenance support into the right position so that the platform is safely supported.
- ▶ When performing inspection and maintenance work that does not rely on electrical power, turn OFF power and secure it from actuation with a padlock. No strain can be placed on the dock leveler in this state!
- ▶ Secure the maintenance area. Use barrier tape, traffic cones or similar aids.

ATTENTION

Danger of short circuits due to liquids
If liquids reach parts of the dock leveler that are under electrical voltage, this can result in a short circuit.

- ▶ Avoid contact of energized parts with liquids.

- ▶ Inspect the dock leveler at least once a year for damage and test it for proper operation. The maintenance intervals are shortened under the following conditions:
  - No protection by a dock seal or canopy
  - High exposure to weathering
  - Multi-shift operation.

Inspection and maintenance schedule

Actions	Intervals
T = Test function	D = Daily
V = Visual inspection	W = Weekly
C = Change	M = Monthly
	A = Annually or after 12 months, or more frequently if used in multi-shift operation or used intensively

Area	Actions	Intervals
User information, see *10.2.1* – Completeness – Legibility	V	A
General condition of the dock leveler, see *10.2.2* – Visual assessment – Damage, deformation – Corrosion – Dirt • Bumpers – Presence – Condition, wear	V	D
Emergency stop switch, see *10.2.3* – Condition – Function – Ease of movement – Option to secure system against unintentional actuation	T	W
General operating functions, see *10.2.4* – Function – Operational safety	T	M
Construction, see *10.2.5* • Welding seams, connections, guides, hinges, safety components – Condition – Ease of movement – Deformation – Corrosion • Safety components – Completeness – Condition – Function	V, T	A
If equipped accordingly: • Anti-slip or acoustic insulation coating – Condition • Gap sealing – Completeness – Condition, wear – Deposits, see *Cleaning and care on page 20*		
Electrical system, see *10.2.6* • Control system and control elements – Condition – Function • Cables – Condition – Fixing – Connections	V, T	A
Hydraulic unit, see *10.2.7* – Condition – Tightness – Corrosion – Function – Safety equipment • Hose lines – Condition – Fixing – Service life – Connections • Cylinder – Condition – Connections • Oil – Quantity – Condition – Bleeding	V,T V C V,T V C	A A 5A A A 5A

10.2.1 User information

– Check that the user information is complete and in good, legible condition.

What?	Where?
Data label with the following information: Manufacturer, type, rated load, serial number, year of manufacture, power supply	On the front beam and on the control box
Motor label	On the hydraulic unit
Hydraulic unit data label	On the tank
Operating instruction for maintenance support	On the front beam The maintenance support includes labels with instructions

What?	Where?
Safety marking	On the side edges below the running plate, for frame and box models on the side panels of the frame construction. For pit models on the side in the pit.
Brief instructions: • Control operating symbols • Label specifying rated load	On or in direct vicinity of the control housing
Instructions for fitting, operating and maintenance	Readily accessible
Documentation for control and, if needed, functional extensions	Readily accessible
Log book	Readily accessible
Specification of next inspection and maintenance date	On or in direct vicinity of the control housing

10.2.2 General condition

- ▶ Perform a visual inspection for mechanical damage, deformation and corrosion. Pay attention to the connection to the building structure and the condition of the welding seams.
- ▶ Remove any dirt, see *Cleaning and care on page 20*.
- ▶ Check that the bumpers are present on the ramp and in good condition.
- ▶ Commission the repair of all defects immediately.

10.2.3 Main switch and emergency stop

- ▶ Inspect the condition and functioning of the emergency stop function (available only with the Advance Control Box) and the restart inhibition. Follow the documentation for the control.

10.2.4 General operating functions

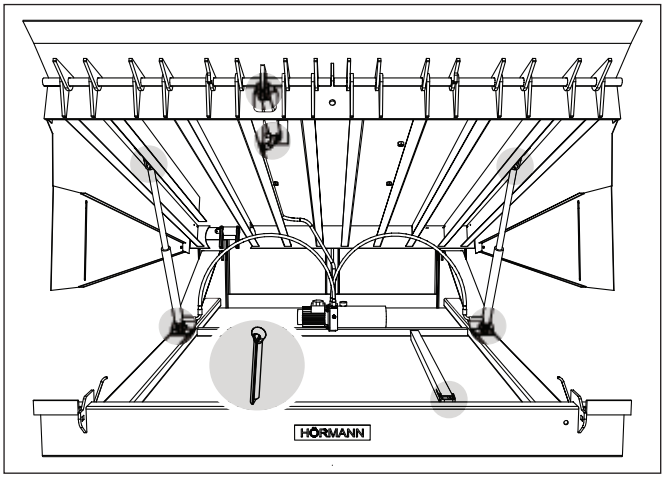
- ▶ Conduct a test run during which all operating functions are inspected:
  - Lifting
  - Folding the lip out and in
  - Lowering
  - Returning to home position
  - Door release (with corresponding equipment)
  - Floating position

  Follow the documentation for the control.

10.2.5 Design

- ▶ Perform a visual inspection for mechanical damage, deformation or corrosion. Look for welding seams, screw connections, rust formation.
- ▶ Check the connection to the building structure.
- ▶ Check to see that movable parts move freely.
- ▶ Pay particular attention to the completeness, condition and functioning of the following safety devices:
  - Anti-slip platform
  - Foot guard plates
  - Maintenance supports
  - Securing split pins, see Figure

HLS2



- ▶ With corresponding equipment: Check whether the following equipment is intact:
  - Gap sealing if supplied.
- ▶ Commission the repair of all defects immediately.

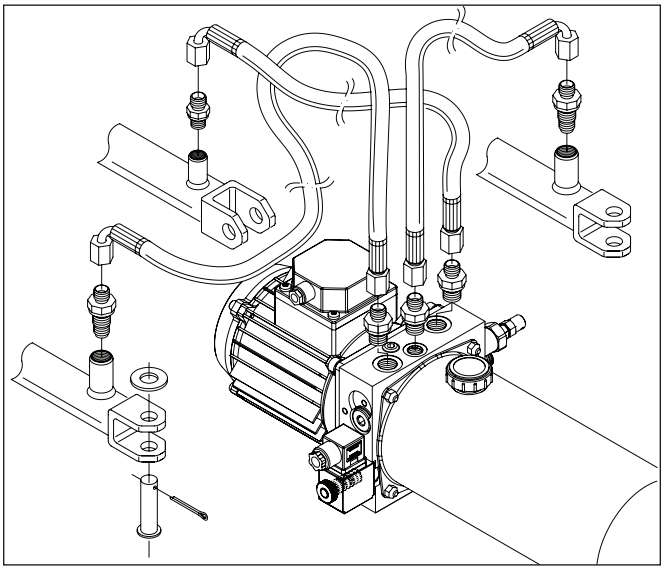
10.2.6 Electrical system

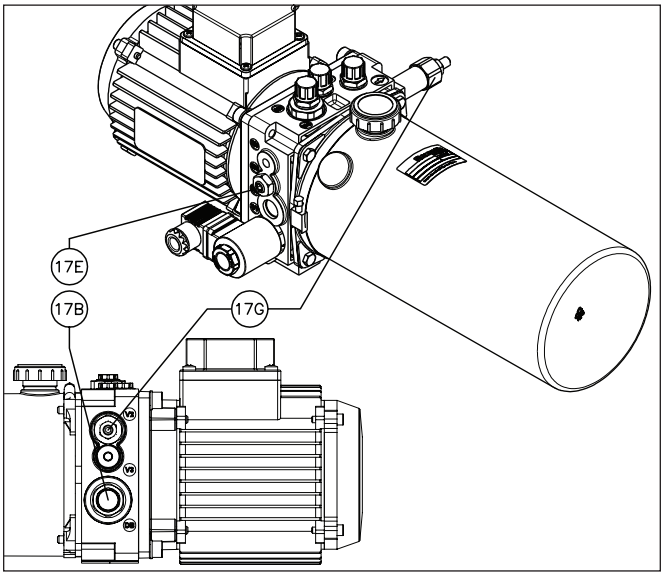
- ▶ Perform a visual inspection for mechanical damage to the electrical lines and control elements. Follow the separate documentation for the control and, if applicable, for the functional extensions of the dock leveler.
- ▶ Commission the repair of all defects immediately.

10.2.7 Hydraulic system

Deviations from the version shown may occur. Hydraulic diagrams, see *Hydraulic system diagram on page 30*.

HLS2





17B Pressure relief valve
17E Throttle valve
17G Shuttle valve

- ***Do not disconnect the power, as the solenoid valve will cease to function.***
- If there is no tailboard slot, make sure that the hydraulic components can be reached safely.
- Perform a visual inspection for mechanical damage on the following components:
  - Hose lines including connections. Check for porosity. Check the position of the hose clamps. Movements caused by differential pressure during operation must not lead to friction damage.
  - Cylinders, including fastenings and connections. Check for the following: leaks, cracks, grooves, dirt and corrosion.
  - Hydraulic unit, including connections. Check for the following: leaks, cracks, grooves, dirt, and corrosion.
- Remove any dirt and rust.
- Replace defective components immediately.
- Check that the automatic safety device (hose safety device) is in place and functioning.
  - Remove the valve and make sure it is easy to move and free of dirt.
  - Re-install the valve.
  - Exchange the valve if necessary.

- ▶ Test the oil level and oil quality. The dock leveler should be in the home position for this. The tank should be half to three quarters full. If the oil level is insufficient, top up the oil. Change the oil in case of: dark coloration, cloudiness, soiling, burnt smell. Standard value for oil change:
  - – With normal use after 5 years
  - – With frequent use after 2.5 years

  Do not substitute an oil change by purifying the oil. Purifying does not sufficiently prevent the oil quality from deteriorating.

NOTICE

We recommend changing oil and hose lines every 5 years. The reference date is the year of manufacture as per the data label. If any evidence of wear or damage is visible, replace hose lines earlier, e.g. in case of small cracks or leaks.

Testing and setting the lowering speed

Basic setting: The lowering speed is set correctly when the platform lowers as quickly as it raises.

The lowering speed must be fast enough to ensure that the lip is supported directly on the loading surface at all times during loading.

The lowering speed must not exceed a max. of 8in/s on average measured at the front of the dock leveler.

- ▶ Test the lowering speed at least 1 × a year
- ▶ If necessary, adjust the lowering speed with the throttle valve.

Adjusting the pressure

The hydraulics pressure was set during production; it can, however, be affected by local conditions (temperature).
If faults are due to incorrect pressure, readjust the pressure:

HLS2: Main pressure

1. Move the dock leveler to its lowest position.
2. Remove the cover cap of the pressure relief valve.
3. Turn the main pressure relief valve to the left so that the main pressure is reduced. The platform should not rise anymore!
4. Turn the pressure relief valve to the right to increase the main pressure.
5. Once the platform begins to rise, turn the pressure relief valve another half rotation to the right.
6. Check whether the lip folds out in the highest position. If necessary, correct the counter-pressure on the lip.
7. Seal the valve with a new cover cap.

HLS2: Counter-pressure on lip

1. Adjust the shuttle valve so that the lip folds out completely when the platform is in the highest position.
2. Increase the main pressure by turning a quarter-turn to the right.

Changing the oil

⚠ WARNING

Danger of burns from hot oil.
The oil may heat up excessively during operation of the dock leveler.

- ▶ Wear gloves.
- ▶ Carefully feel the tank to see if the oil is sufficiently cool.

1. Raise the dock leveler.
2. Secure the dock leveler using the maintenance support. If the maintenance support does not offer sufficient accessibility, use a steel beam. HLS2 only: For work on the hinged lip cylinder, also support the hinged lip.
3. Remove the lifting cylinder from the platform and the base frame.
4. Unlock the throttle valve and open the valve completely. Note the number of rotations.
5. Press the lifting cylinder in by hand, thus causing the oil to flow back into the tank.
6. Remove the hose line from the lifting cylinder. Put the lifting cylinder into a receptacle.
7. Press the RAISE button so that the oil can run out of the tank and into the receptacle.
   Stop as soon as the oil begins to squirt.
8. Fill the tank with new oil. If you use a different type of oil, rinse the tank with the new oil first.
9. Attach the hose line to the cylinder again.
10. Bleed the hydraulic system and check the lowering speed.
11. Document the type and viscosity of the oil used.
12. Properly dispose of the waste oil.

Changing the hose line

1. Raise the dock leveler.
2. Secure the dock leveler using the maintenance support.
3. Remove the damaged hose line from the cylinder.
4. Put the hose line in a receptacle.
5. Install a new hose line.
6. HLS2 only: Bleed the hydraulic system.

Changing a cylinder

1. Raise the dock leveler.
2. Secure the dock leveler using the maintenance support. If the maintenance support does not offer sufficient accessibility, use a beam. HLS2 only: For work on the hinged lip cylinder, also support the hinged lip
3. Loosen the cylinder on both cylinder axles.
4. Press the damaged cylinder in by hand, thus causing the oil to flow back into the tank.
5. Remove the hose lines from the cylinder. Put the cylinder into a receptacle.
6. Attach the hose lines to a new cylinder.
7. Attach the new cylinder.
8. HLS2 only: Bleed the hydraulic system
9. Make sure that the lowering speed is set correctly.

Changing a valve

1. Raise the dock leveler.
2. Secure the dock leveler using the maintenance support.
3. Release the hydraulic unit from the holder.
4. Place the hydraulic unit vertically so that the oil is primarily in the tank.
5. Replace the damaged valve.
6. Make sure that the lowering speed is set correctly.
7. HLS2 only: Bleed the hydraulic system
8. Refasten the hydraulic unit to the holder.

Bleeding (HLS2 only)

Bleeding of the hydraulic system largely occurs during normal operations. The air in the lifting cylinders escapes during raising and lowering. Some air does remain in the lip cylinder, however. Proceed as follows to bleed the system completely:

1. Place the lip cylinder vertically (hose output facing upward) and press the start button. This will refill the cylinder with oil.
2. Press the cylinder in again by hand, so the air – mixed with oil – flows into the tank.
3. Repeat steps 1 and 2 around 10 more times to get all the air out of the oil.
4. Make sure that the lowering speed is set correctly.

10.3 Malfunctions and troubleshooting

⚠ WARNING

Danger of injury when remedying malfunctions
In the case of a malfunction, the dock leveler may no longer function reliably. Persons, body parts or objects may be crushed or jammed in case of faulty operation.
- ▶ For all work on the dock leveler, fold out the maintenance support. Place the maintenance support in an upright position.
- ▶ Set the main switch to OFF position and secure it with a padlock to prevent unauthorized operation.

Troubleshooting must only be carried out by qualified specialist personnel, see *Specialist personnel on page 3*.

- ▶ In the case of a malfunction, always first check if there is any mechanical damage or if any components are jammed. Only after that has been ruled out, start looking for other causes as described in the following overview.

Possible malfunctions are described in the following:

Malfunction
Possible cause. ▶ Remedy.

The dock leveler does not respond. **The motor does not run.**
The emergency stop switch / main switch is set to OFF position or the restart inhibition is activated. ▶ Check whether (and why) the emergency stop switch has been actuated (e.g. for maintenance work). ▶ After eliminating the cause, press the *RAISE* button to deactivate the restart inhibition. Then the dock leveler is ready for operation again.
Fault in the power supply. ▶ Check the connecting voltage and the wiring. ▶ Check the control box to see if a fuse or the wiring has loosened. Follow the documentation for the control.
Dock leveler release function blocks the dock leveler. If equipped accordingly, the dock leveler cannot be operated if the door is not completely open. ▶ Open the door completely. ▶ Check the “Open” signal. Follow the documentation for the control.

The dock leveler does not respond.
The motor does not run.

Wheel chock with sensor blocks the dock leveler.
If equipped accordingly, the dock leveler cannot be operated if the wheel chock with sensor is not positioned correctly.
- ▶ Make sure that the wheel chock is positioned correctly.
- ▶ Check for damage to the sensor or wiring.
- ▶ Check whether the wheel chock switches properly. Follow the documentation for the wheel chock.
- ▶ If the wheel chock functions properly, test the function of the dock leveler
- ▶ Disconnect the wheel chock. Test whether the dock leveler is functioning. Follow the documentation for the control.

Fault in the hydraulics.
- ▶ If none of the above possibilities solve the problem, contact the supplier's or manufacturer's customer service department.

Platform does not rise, even with a functioning motor

The motor is running in the wrong direction.
It is possible that the motor was connected with inverted phases during initial start-up of the dock leveler or after replacing the hydraulic unit. In this case, the motor rotates, but the platform does not respond.
- ▶ Correct the polarity of the motor connections in the control or, if necessary, on the motor.

Platform has jammed.
- ▶ Check to see if the movement of the platform is blocked.

Pressure in the hydraulic system is too low.
The hydraulics pressure was set during production; it can, however, be affected by local conditions (temperature).
- ▶ Readjust the pressure.

Oil level is too low.
In the home position, the tank should be between one half and three quarters full.
- ▶ Inspect the system for leaks on the cylinders, hose lines and connections.
- ▶ Replace defective parts.
- ▶ Top up the oil tank with a suitable oil.

Fault in the hydraulics.
- ▶ If none of the above possibilities solve the problem, contact the supplier's or manufacturer's customer service department.

Platform rises very slowly or incompletely

Soiled hinge.
- ▶ Check for soiling on the rear side of the hinges. Clean if required.

Platform rises very slowly or incompletely

Oil level is too low.
In the home position, the tank should be between one half and three quarters full.
- ▶ Inspect the system for leaks on the cylinders, hose lines and connections.
- ▶ Replace defective parts.
- ▶ Top up the oil tank with a suitable oil.

Contaminated oil.
- ▶ Remove and dispose of the contaminated oil.
- ▶ Clean the valves.
- ▶ Top up the oil tank with a suitable oil.

Pressure in the hydraulic system is too low.
The hydraulics pressure was set during production; it can, however, be affected by local conditions (temperature).
- ▶ Readjust the pressure.

Fault in the hydraulics.
- ▶ If none of the above possibilities solve the problem, contact the supplier's or manufacturer's customer service department

Platform does not go down, is blocked at the highest position or during lowering

The emergency stop switch / main switch is set to OFF position or the restart inhibition is activated.
- ▶ Check whether (and why) the emergency stop switch has been actuated (e.g. for maintenance work).
- ▶ After eliminating the cause, press the *RAISE* button to deactivate the restart inhibition. Then the dock leveler is ready for operation again.

Fault in the power supply.
- ▶ Check the connecting voltage and the wiring.
- ▶ Check the control box to see if a fuse or the wiring has loosened. Follow the documentation for the control.

Platform has jammed.
- ▶ Check to see if the movement of the platform is blocked.

Automatic safety device (hose safety device) has been activated.

Attention!
Do not use the dock leveler any longer if the hose safety device has tripped!
- ▶ Find the cause:
  - – The hydraulic system is contaminated or damaged.
  - – There is air in the cylinder.
  - – There is a load on the platform while the lip is not resting on the loading surface of the truck.
- ▶ Eliminate the cause. Briefly press the *RAISE* button to unblock the platform.

The lowering speed is set too high.
The hydraulics pressure was set during production; it can, however, be affected by local conditions (temperature).
- ▶ Readjust the pressure.

Platform does not go down, is blocked at the highest position or during lowering
Soiling or damage to the hydraulics. ▶ Inspect the system for soiling and leaks on the cylinders, hose lines, and connections. Clean the system and replace defective parts.
Incorrect oil. The specified viscosity was not used when changing or topping up the oil. ▶ Exchange the oil.
2/2-way valve blocks the oil flow. ▶ Press the *RAISE* button. Check the function of the solenoid coil: – With a magnetic field tester – or by loosening the nut and pulling the coil. Perceptible resistance indicates that the coil is functioning properly. ▶ Remove the valve and clean the inlet.

Platform lowers too quickly or too slowly
Extremely high or low temperatures. ▶ Consult the manufacturer or supplier if the dock leveler is operated in a cooled or heated room. It may be necessary to use a different type of oil or adjust the settings. Do not change the settings if the malfunction is the result of a temporary temperature fluctuation.
Pressure in the hydraulic system is too high or too low. The hydraulics pressure was set during production; it can, however, be affected by local conditions (temperature). ▶ Readjust the pressure.
Incorrect oil. The specified viscosity was not used when changing or topping up the oil. ▶ Exchange the oil.

Hinged lip (HLS2) does not fold out completely / at all
Operating error. ▶ Move the platform to the highest position. Keep the start button pressed. The hinged lip will fold out automatically.
Folding mechanism is defective. ▶ Check the hose line and connections on the hinged lip cylinder for defects and leaks. Replace defective parts.
Pressure in the hydraulic system is too low. The hydraulics pressure was set during production; it can, however, be affected by local conditions (temperature). ▶ Readjust the pressure.

Hinged lip (HLS2) does not fold out completely / at all
Oil level is too low. In the home position, the tank should be between one half and three quarters full. ▶ Inspect the system for leaks on the cylinders, hose lines and connections. ▶ Replace defective parts. ▶ Top up the oil tank with a suitable oil.
Incorrect oil. The specified viscosity was not used when changing or topping up the oil. ▶ Exchange the oil.

Auto-return button does not work
One of the sensors on the front of the platform or on the support yoke of the front beam does not function correctly. ▶ Determine if the sensors are clean and the wiring is in order. Replace defective sensors, if necessary.
The emergency stop switch / main switch is set to OFF position or the restart inhibition is activated. ▶ Check whether (and why) the main switch has been actuated (e.g. for maintenance work). ▶ After eliminating the cause, press the RAISE button to deactivate the restart inhibition. Then the dock leveler is ready for operation again.

10.4 Spare parts

- ▶ Only use original spare parts from the manufacturer. The warranty claims for all defects attributable to the use of non-original spare parts will be invalidated.
- ▶ When ordering spare parts, always provide the following data:
  - – All data label information, see section *13.1*.
  - – Component designation, see section *15*.
  - – Quantity and, if known, article number of the spare part.
  - – Shipping method and personal data.

It is sometimes a good idea to keep some spare parts in stock. Ask your loading technology consultant for more information.

10.4.1 Returning defective parts

If the defective parts are still under warranty:

- ▶ Ask the supplier's or manufacturer's customer service whether the parts have to be returned.
- ▶ Do not return any parts that have been damaged due to wear, your own fault or by accident.
- ▶ Always provide the following data with your returns:
  - – Type and serial number according to the data label, see section *13.1*.
  - – Serial number of the hydraulic unit, see motor data label
  - – Delivery date, see invoice documents
  - – Reference number, e.g. order number, service report number or ticket number, see correspondence
  - – Personal data.

Assemblies must not contain hydraulic oil for customs and environmental reasons.

- ▶ Remove the oil from the hydraulic unit before shipping.
- ▶ Properly dispose of the oil.

11 Dismantling and disposal

- ▶ During dismantling, make sure that the dock leveler is in home position.
- ▶ Disconnect the mains voltage.
- ▶ Drain the hydraulic oil and remove all hydraulic components.
- ▶ Properly dispose of the components.
- ▶ Completely disassemble and remove the dock leveler.
- ▶ Provide the components of the dock leveler to sufficiently qualified companies for recycling.

If you intend to install the dock leveler at another location, check for operational safety in accordance with the new operating conditions.

- ▶ To do this, pass these instructions, as well as documentation for the control, on to the responsible party.

12 Liability for defects

For the liability for defects (warranty), the generally recognized terms and conditions or those agreed in the delivery contract apply.
The liability for defects lapses for defects that can be traced back to the following causes:

- Non-observance of these instructions.
- Improper use of the product.
- Improper fitting and handling of the product.
- Insufficient inspection and maintenance.
- Use of the product by unqualified personnel.
- Modifications to the design of the product without the manufacturer's prior permission.
- Use of spare parts that were not manufactured or approved by the manufacturer.

13 Technical data

The specified dimensions and values apply for the standard versions.

Type	See data label
Weight	See data label
Rated load	See data label
Temperature range in the surrounding area of the hydraulic unit	–10°C to +50°C (14°F to 122°F) When using low-temp oil: –25°C to +50°C (-13°F to 122°F)
Energy supply	See data label
Technical data for the control	See the control documentation

Explanation of the specifications

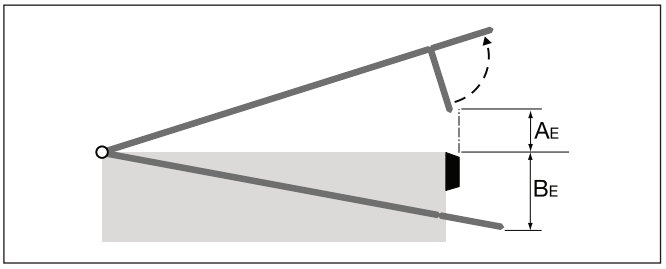
TYPE	Type of the dock leveler
SERIAL NO. DIMENSIONS (NW-NL)	Serial number Ordering width NW Ordering length NL
LIP SPECIFICATIONS	Lip length and shape (R = straight, S = chamfered)
SUPPLY: VOLTAGE, FREQUENCY, CURRENT	Electrical data
RATED LOAD	Rated load according to ANSI-MH-30.1-2022
WEIGHT COLOR SPECIAL PROPERTIES	Weight of the dock leveler Color of the dock leveler Year of fabrication and color

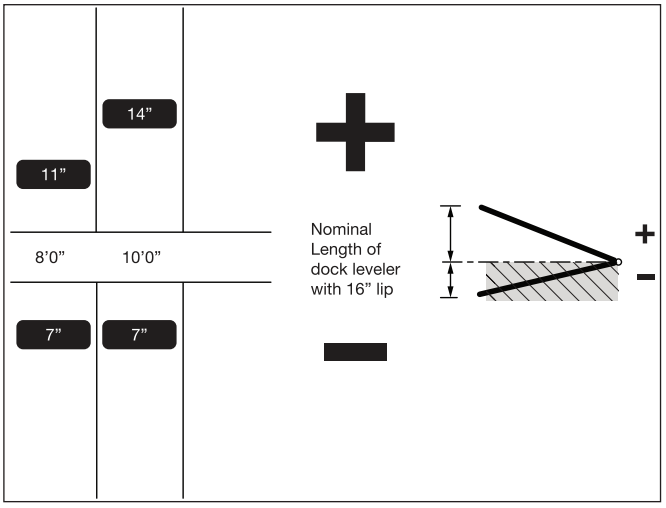
13.1 Dimensions and effective working range

The specified dimensions and values apply for the standard versions. The working range will deviate from the information in the tables if the installation height, length or rated load is different. If necessary, please ask the supplier or manufacturer for this information.

The dock leveler can be raised above and lowered below the ramp level.

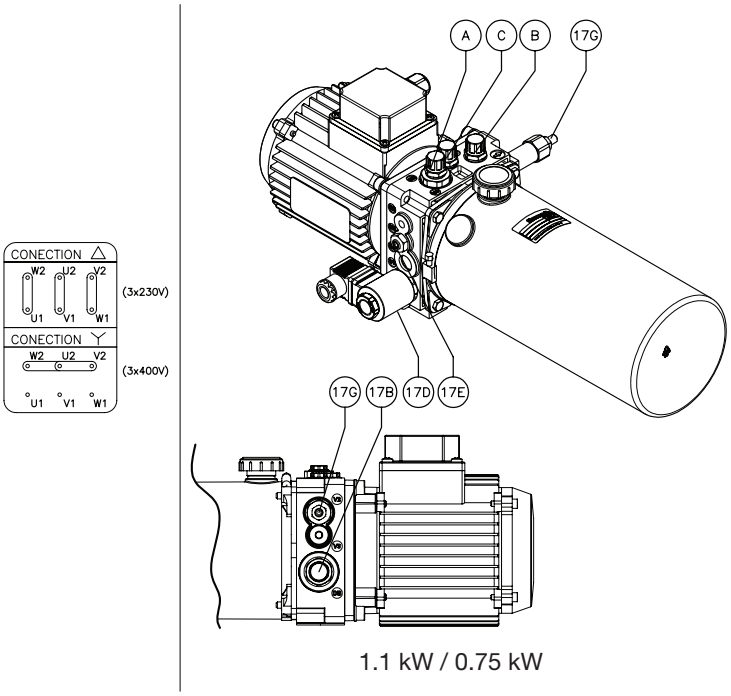
HLS2



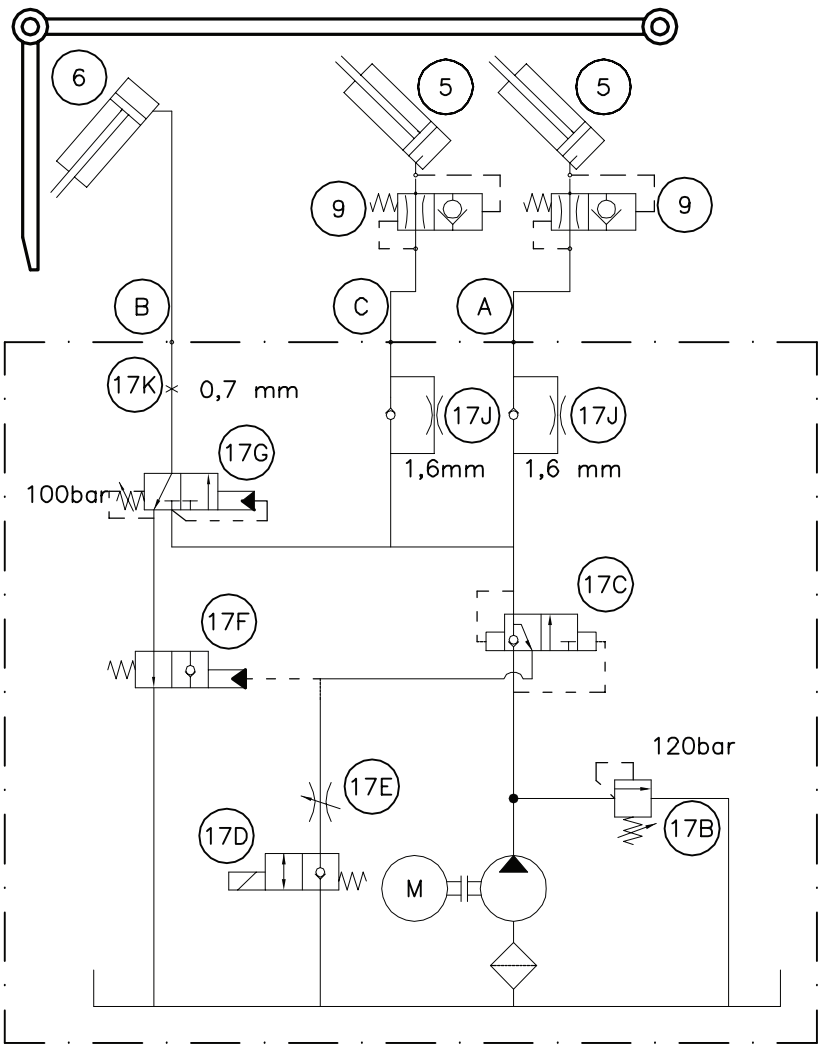


14 Hydraulic system diagram

14.1 Hydraulic system HLS2



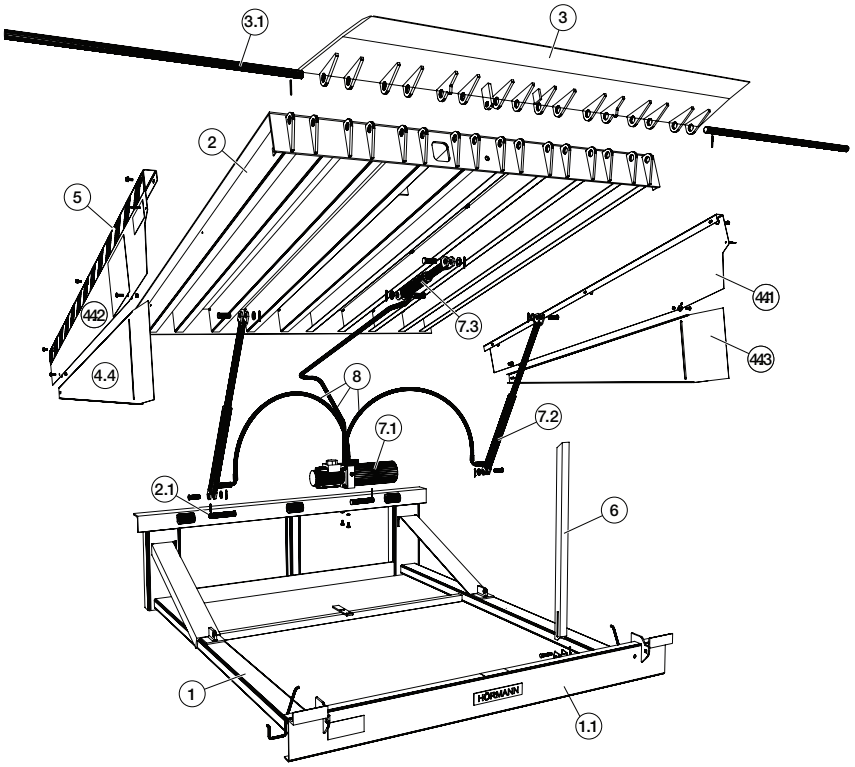
1.1 kW / 0.75 kW

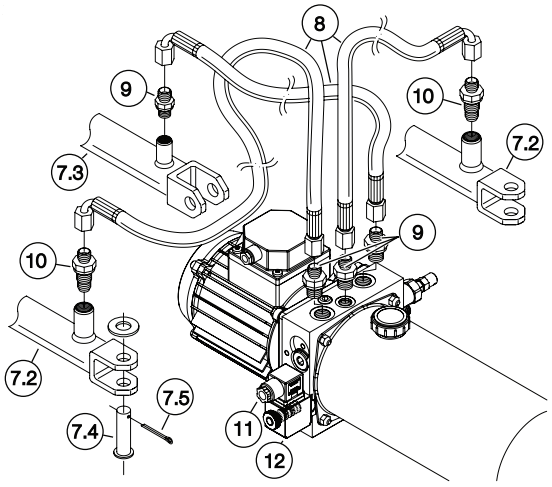


A	Hose line for lifting cylinder
B	Hose line for hinged lip cylinder
C	Hose line for lifting cylinder
5	Lifting cylinder
6	Hinged lip cylinder
9	Hose safety device
17B	Pressure relief valve
17C	Free-flow valve
17D	2/2 valve, lowering (electric) (available only with the Advance Control Box)
17E	Throttle valve
17F	2/2 valve (hydraulic)
17G	Shuttle valve
17J	Throttling, integrated in lifting cylinder outlet
17 K	Throttling, integrated in hinged lip cylinder outlet

15 Overview of components

15.1 Components HLS2 pit model (may deviate from the illustration)





1	Base frame	4.3	Foot guard plate, bottom right	7.5	Securing split pin
1.1	Front beam	4.4	Foot guard plate, bottom left	8	Hose line
2	Platform	5	Marker stripes	9	Coupling
2.1	Rear hinge axle	6	Maintenance support	10	Coupling with hose safety device*
3	Hinged lip	7.1	Hydraulic unit	11	2/2-way directional valve
3.1	Hinged lip hinge axle	7.2	Lifting cylinder	12	Solenoid valve (available only with the Advance Control Box)
4.1	Foot guard plate, top right	7.3	Hinged lip cylinder		
4.2	Foot guard plate, top left	7.4	Cylinder axle		

* If the product deviates from the illustration (coupling as in item 9), the hose safety device is integrated in the lifting cylinder

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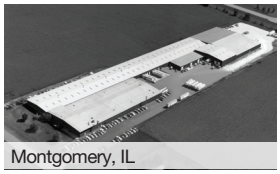

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