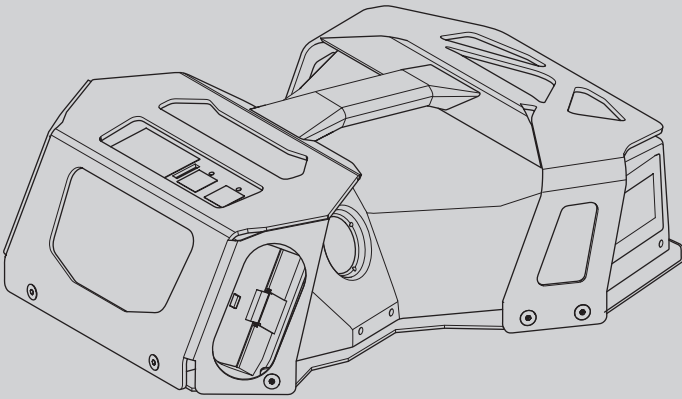


Q.Lign

Achsmessgerät

Wheel Alignment



de Planungsmappe
en Planning file
fr Dossier de planification
es Libro de planificación
it Cartelle di progettazione

Achsmessgerät
Wheel Alignment System
Système de contrôle de géométrie
Alineador de ejes
Sistema di controllo assetto

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1. Symbols used

1.1 In the documentation

1.1.1 Warning notices - Structure and meaning

Warning notices warn of dangers to the user or people in the vicinity. Warning notices also indicate the consequences of the hazard as well as preventive action. Warning notices have the following structure:

Warning symbol	KEY WORD – Nature and source of hazard! Consequences of hazard in the event of failure to observe action and information given. ➤ Hazard prevention action and information.
----------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

The key word indicates the likelihood of occurrence and the severity of the hazard in the event of non-observance:

Key word	Probability of occurrence	Severity of danger if instructions not observed
DANGER	Immediate impending danger	Death or severe injury
WARNING	Possible impending danger	Death or severe injury
CAUTION	Possible dangerous situation	Minor injury

1.1.2 Symbols in this documentation

Symbol	Designation	Explanation
!	Attention	Warns about possible property damage.
ⓘ	Information	Practical hints and other useful information.
1. 2.	Multi-step operation	Instruction consisting of several steps.
➤	One-step operation	Instruction consisting of one step.
↪	Intermediate result	An instruction produces a visible intermediate result.
→	Final result	There is a visible final result on completion of the instruction.

1.2 On the product

- ! Observe all warning notices on products and ensure they remain legible.

2. User information

2.1 Important notes

Important information on copyright, liability and warranty provisions, as well as on equipment users and company obligations, can be found in the separate manual "Important notes on and safety instructions for Beissbarth Wheel Test Equipment". These instructions must be carefully studied prior to start-up, connection and operation of the Q.Lign and must always be heeded.

2.2 Safety instructions

All the pertinent safety instructions can be found in the separate manual "Important notes on and safety instructions for Beissbarth Wheel Test Equipment". These instructions must be carefully studied prior to start-up, connection and operation of the Q.Lign and must always be heeded.

2.3 Validity

- ⓘ These instructions apply to Q.Lign in conjunction with Beissbarth Wheel Test Equipment.
- ⓘ Valid for all scissor lifts and 4-post lifts when they meet the requirements for correct wheel alignment

3. General instructions

3.1 Working environment

- i Limitation due to sunlight:
 - Optical measuring systems do not work in direct sunlight.
 - Direct and intense solar radiation on the mono camera and reference system may hamper an exact measurement of the Q.Lign.
 - Sunlight can restrict performance if for example the measurement bay has a glass enclosure. This problem can be solved by dimming the light in the measurement bay using foil.

3.2 Installation

- ! The specifications given in the planning folder are minimum requirements designed to ensure correct assembly of the Q.Lign. Any applicable local legislation, guidelines and standards must be observed when implementing the instructions!
 Beissbarth GmbH will not accept liability for damage arising from failure to observe national regulations.
- ! The following requirements for assembly and commissioning at the measurement bay must be satisfied before the Beissbarth service technician performs installation.

4. Measurement bay level

- i The permissible height difference must not be exceeded for the vehicle wheel support points on the measurement bay (turntables and sliding bases) in the transverse, longitudinal or diagonal directions.
- i Observe the allowed level for measuring and working height on lifts (example: 4-post lift).

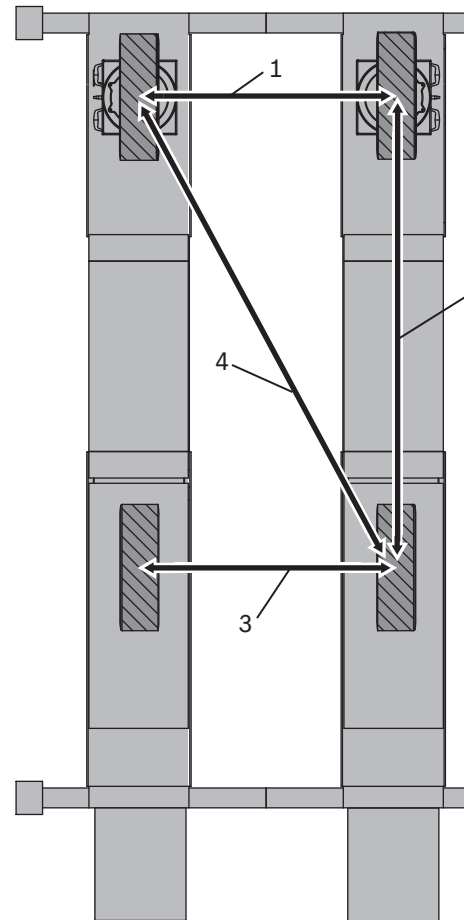


Abb. 1: Measurement bay level


No.	Permissible height difference	Value [mm]
1	Transverse direction at front (left to right)	≤ 1
2	Longitudinal direction (front to rear)	≤ 2
3	Transverse direction at rear (left to right)	≤ 1
4	Diagonal direction (front / rear to left / right)	≤ 2

Tab. 1: Permissible height difference for wheel support points

- i Level checking must be performed by authorized service personnel using an optical leveling device. There must be a vehicle of average weight on the lift when checking.
- i If necessary, correct the height difference by fitting turntables and sliding bases.

5. Planning the Compact measurement bay version

5.1 Storage battery version

 The voltage supply for the sensor heads provided by replaceable storage batteries; data transmission is wireless.

5.1.1 Existing components

The following components are part of the storage battery version:

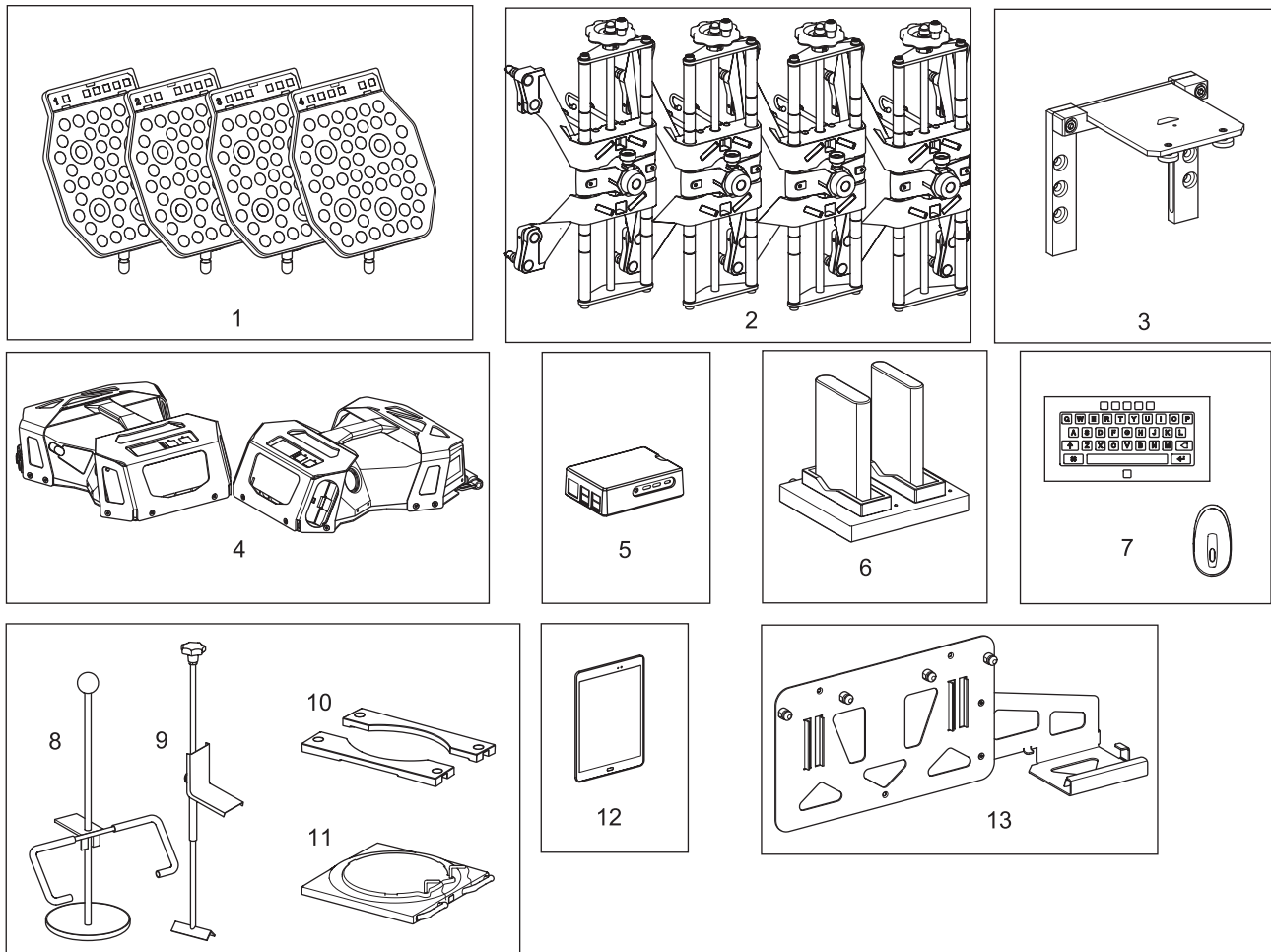




Abb. 2: Storage battery version components

- 1 Measurement board (4 x)
- 2 Multi-Fit clamp (4 x)
- 3 Lift adaptation (2 x)
- 4 Sensor head (2 x)
- 5 Display module
- 6 Storage battery charging station, incl. 2 storage batteries
- 7 Mouse and keyboard
- 8 Steering wheel arrester
- 9 Brake clamp
- 10 Filler (4 x)
- 11 Turntable (2 x)
- 12 Tablet
- 13 Wall mounting for sensor heads and storage battery charging station (optional)

 A monitor is not included in the scope of delivery. The operating company must provide a monitor of its choice and place it at the workplace as necessary.

 Recommended monitor: Minimum size 27", resolution: 1920 x 1080, aspect ratio: 16 : 9.

5.1.2 Installation diagram for 4-post lift

VLH 4740 LA to measure vehicles with a short wheelbase (e.g. Smart), it is necessary to use turntables or short sliding plates at the rear axle.

The selected position of components nos. 1 - 8 are recommendations and can be specified as desired by the customer.

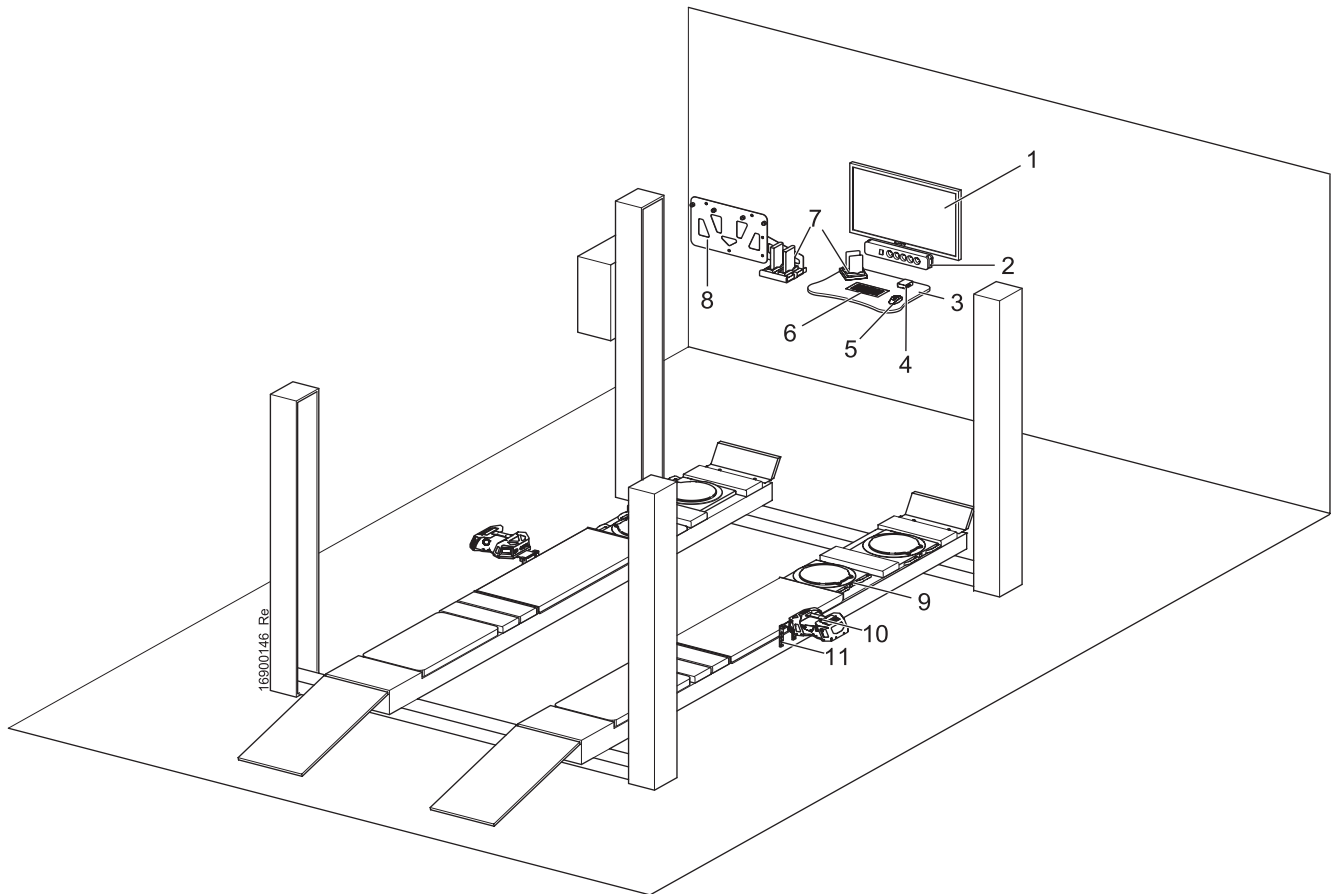


Abb. 3: Installation of components at the measurement bay

No.	Description	Comment
1	Monitor	<ul style="list-style-type: none"> • Monitor provided by the customer. • Recommended minimum size 27", resolution: 1920 x 1080, aspect ratio: 16 : 9 • Wall mounting or stand mounting by customer.
2	Multiple socket outlet	<ul style="list-style-type: none"> • Voltage supply for components (monitor, display module, storage battery charging station). • Provided by customer, preassembled and connected.
3	Shelf/work station	Prepared by customer.
4	Display module	Raspberry Pi (incl. USB stick, micro-SD card, power supply unit) with hook and loop strip as mounting aid.
5	Mouse	Shared USB port (wireless, radio) on the display module.
6	Keyboard	
7	Storage battery charging station	Charging capability for storage batteries (2 x).
8	Wall mounting	Shelf for sensor heads and storage battery charging station (optional).
9	Turntable	Position variable.
10	Sensor head	Can be plugged into adapter.
11	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 2: Overview of components at measurement bay

5.1.3 Installation diagram for scissor lift

 The selected position of components nos. 1 - 8 are recommendations and can be specified as desired by the customer.

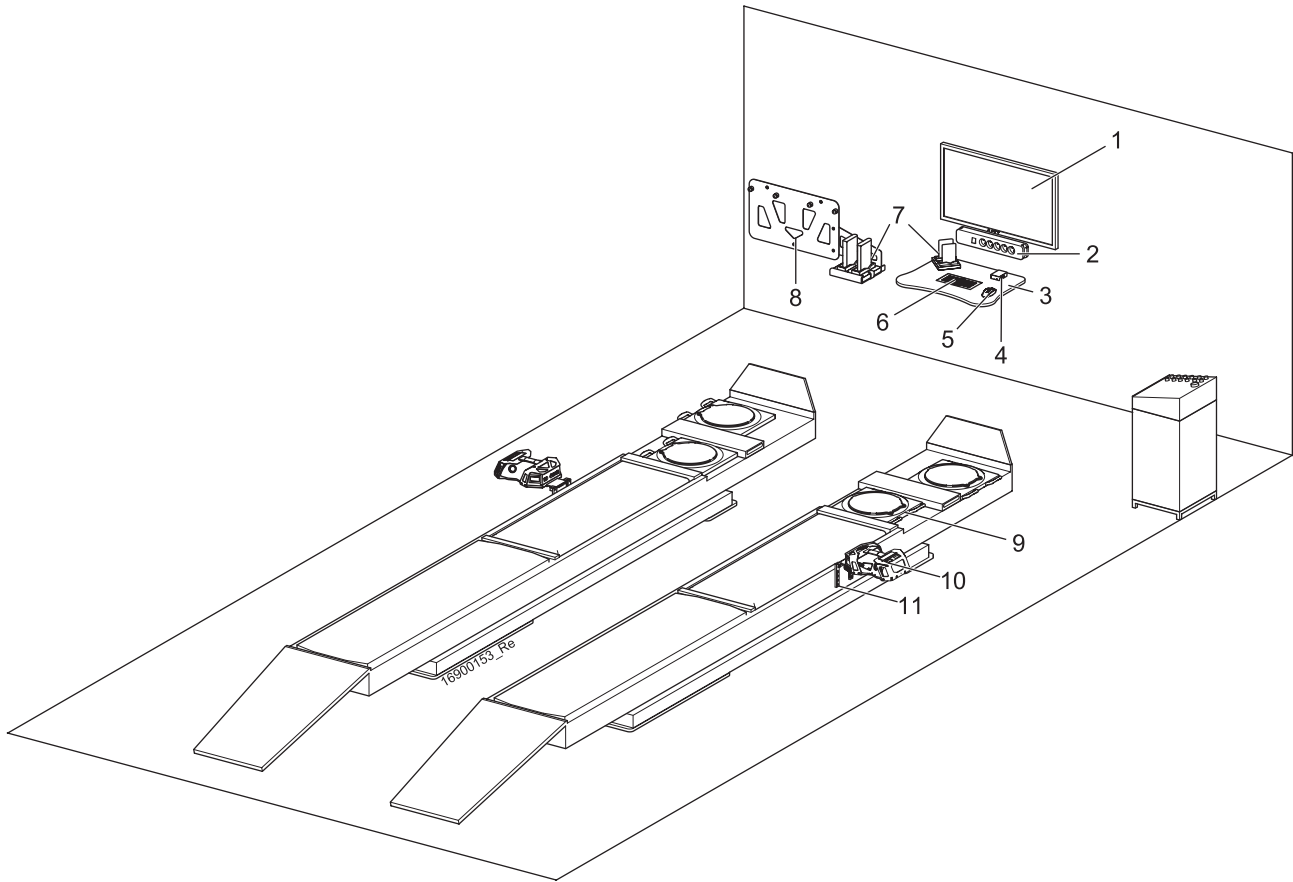



Abb. 4: Installation of components at the measurement bay

No.	Description	Comment
1	Monitor	<ul style="list-style-type: none"> • Monitor provided by the customer. • Recommended minimum size 27", resolution: 1920 x 1080, aspect ratio: 16 : 9 • Wall mounting or stand mounting by customer.
2	Multiple socket outlet	<ul style="list-style-type: none"> • Voltage supply for components (monitor, display module, storage battery charging station). • Provided by customer, preassembled and connected.
3	Shelf/work station	Prepared by customer.
4	Display module	Raspberry Pi (incl. USB stick, micro-SD card, power supply unit) with hook and loop strip as mounting aid.
5	Mouse	Shared USB port (wireless, radio) on the display module.
6	Keyboard	
7	Storage battery charging station	Charging capability for storage batteries (2 x).
8	Wall mounting	Shelf for sensor heads and storage battery charging station (optional).
9	Turntable	Position variable.
10	Sensor head	Can be plugged into adapter.
11	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 3: Overview of components at measurement bay

5.2 Cable operation version

 The voltage supply for the sensor heads is provided by a cable connection to a power box, data transmission is wireless.

5.2.1 Existing components

The following components are part of the cable operation version:

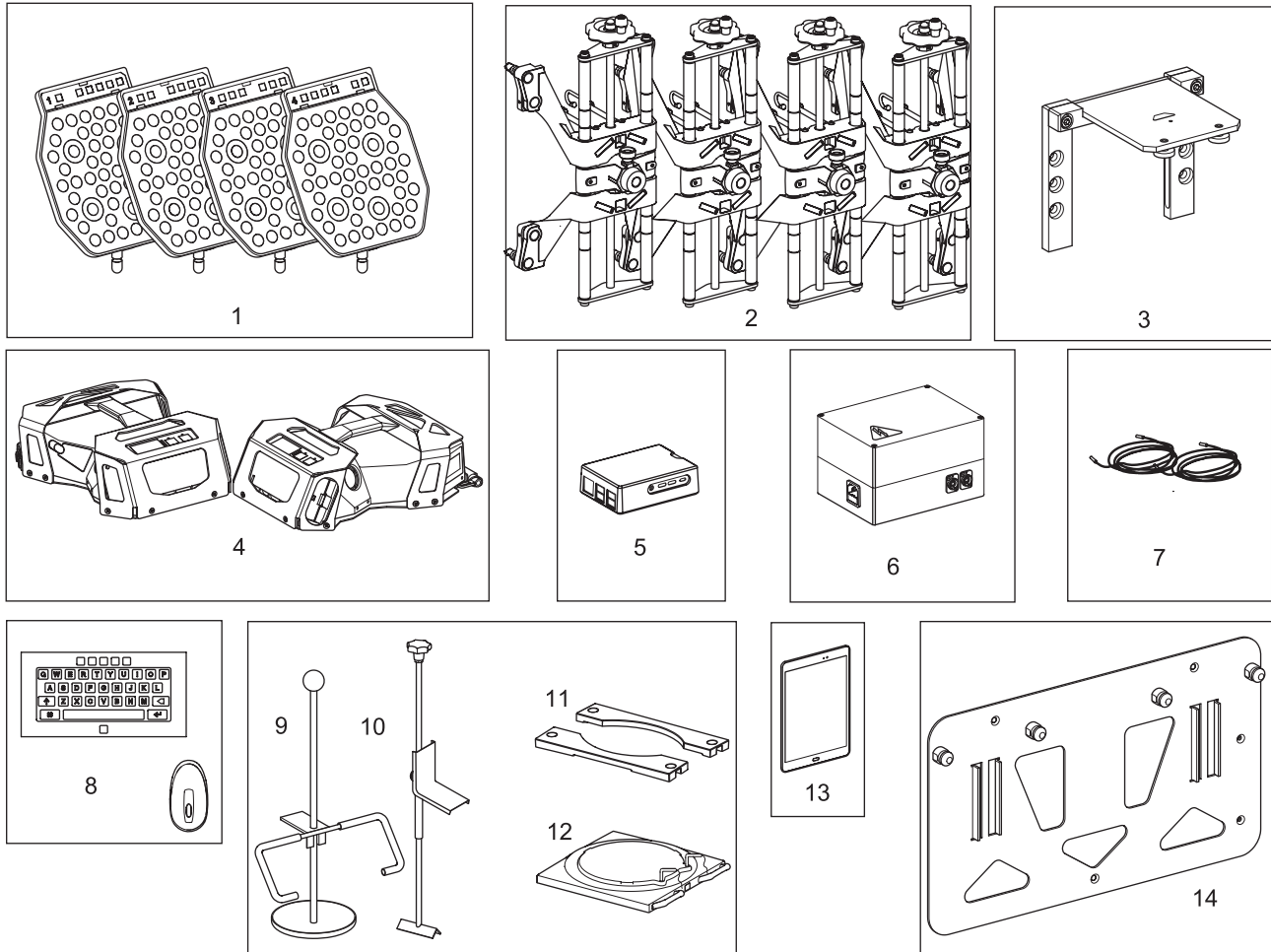




Abb. 5: Cable operation components

- 1 Measurement board (4 x)
- 2 Multi-Fit clamp (4 x)
- 3 Lift adaptation (2 x)
- 4 Sensor head (2 x)
- 5 Display module
- 6 Power box (mounting strip included in scope of delivery)
- 7 Sensor head connecting cable (2 x)
- 8 Mouse and keyboard
- 9 Steering wheel arrester
- 10 Brake clamp
- 11 Filler (4 x)
- 12 Turntable (2 x)
- 13 Tablet
- 14 Wall mounting for sensor heads (optional)

 A monitor is not included in the scope of delivery. The operating company must provide a monitor of its choice and place it at the workplace as necessary.

 Recommended monitor: Minimum size 27", resolution: 1920 x 1080, aspect ratio: 16 : 9.

5.2.2 Installation diagram for 4-post lift

VLH 4740 LA to measure vehicles with a short wheelbase (e.g. Smart), it is necessary to use turntables or short sliding plates at the rear axle.

The selected position of components nos. 1 - 8 are recommendations and can be specified as desired by the customer.

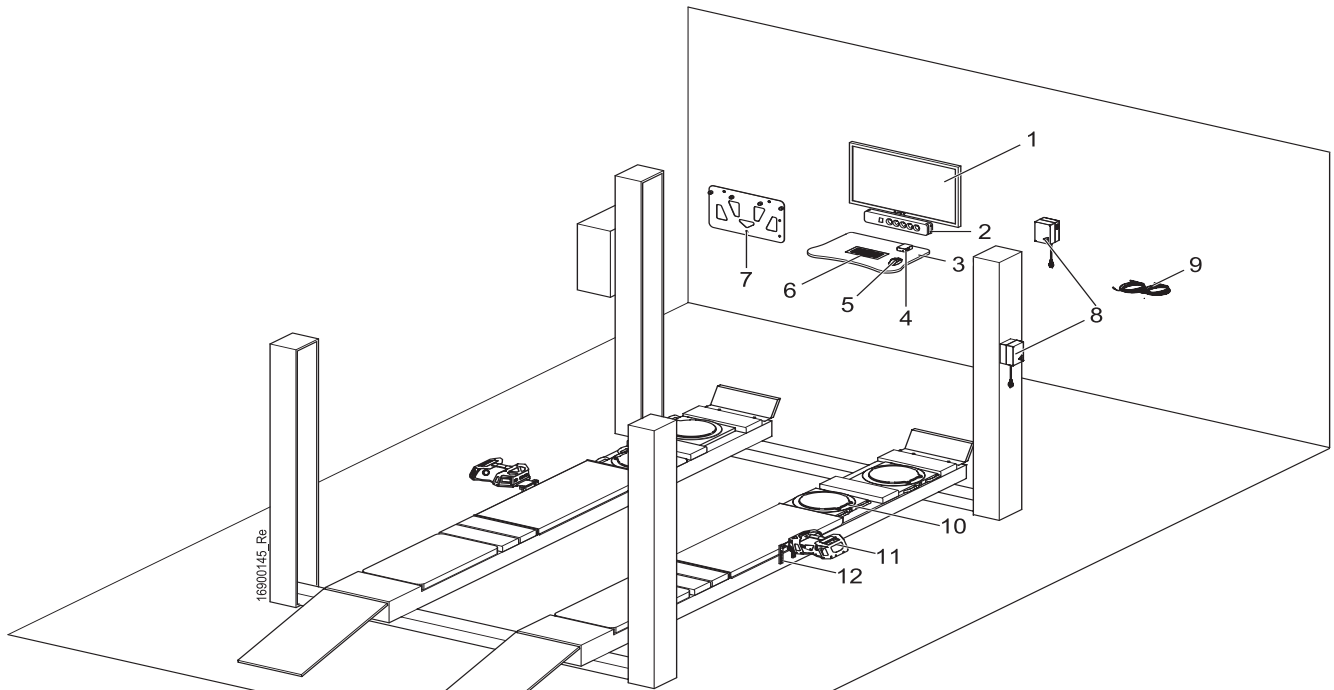


Abb. 6: Installation of components at the measurement bay

No.	Description	Comment
1	Monitor	<ul style="list-style-type: none"> • Monitor provided by the customer. • Recommended minimum size 27", resolution: 1920 x 1080, aspect ratio: 16 : 9 • Wall mounting or stand mounting by customer.
2	Multiple socket outlet	<ul style="list-style-type: none"> • Voltage supply for components (monitor, display module, storage battery charging station). • Provided by customer, preassembled and connected.
3	Shelf/work table	Prepared by customer.
4	Display module	Raspberry Pi (incl. USB stick, micro-SD card, power supply unit) with hook and loop strip as mounting aid.
5	Mouse	Shared USB port (wireless, radio) on the display module.
6	Keyboard	
7	Wall mounting	Shelf for sensor heads and storage battery charging station (optional).
8	Power box	<ul style="list-style-type: none"> • Sensor head voltage supply. • Including power supply cable with grounding-type plug, length = 1.8 m, customer must plan for connection possibility (outlet 230 V/50 Hz, 10 A). • Mounting on wall or lift post by means of mounting strip possible.
9	Connecting cable	<ul style="list-style-type: none"> • Connection from power box to the sensor heads (installation of cable in lift). • 2 Connecting cable, one cable for each sensor head. • Variants: 10 m and 15 m.
10	Turntable	Position variable.
11	Sensor head	Can be plugged into adapter.
12	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 4: Overview of components at measurement bay

5.2.3 Installation diagram for scissor lift

 The selected position of components nos. 1 - 8 are recommendations and can be specified as desired by the customer.

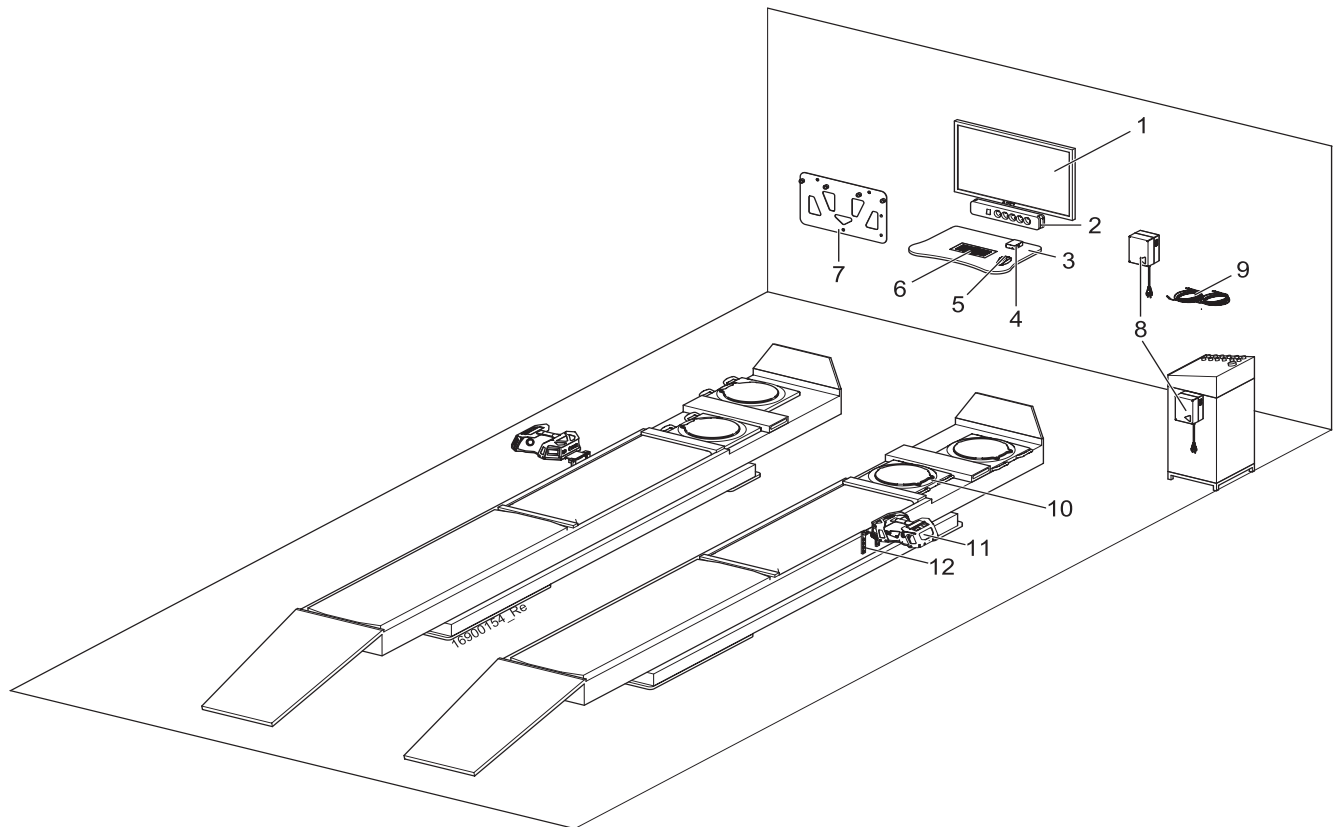



Abb. 7: Installation of components at the measurement bay

No.	Description	Comment
1	Monitor	<ul style="list-style-type: none"> • Monitor provided by the customer. • Recommended minimum size 27", resolution: 1920 x 1080, aspect ratio: 16 : 9 • Wall mounting or stand mounting by customer.
2	Multiple socket outlet	<ul style="list-style-type: none"> • Voltage supply for components (monitor, display module, storage battery charging station). • Provided by customer, preassembled and connected.
3	Shelf/work table	Prepared by customer.
4	Display module	Raspberry Pi (incl. USB stick, micro-SD card, power supply unit) with hook and loop strip as mounting aid.
5	Mouse	Shared USB port (wireless, radio) on the display module.
6	Keyboard	
7	Wall mounting	Shelf for sensor heads and storage battery charging station (optional).
8	Power box	<ul style="list-style-type: none"> • Sensor head voltage supply. • Including power supply cable with grounding-type plug, length = 1.8 m, customer must plan for connection possibility (outlet 230 V/50 Hz, 10 A). • Mounting on wall or lift post by means of mounting strip possible.
9	Connecting cable	<ul style="list-style-type: none"> • Connection from power box to the sensor heads (installation of cable in lift). • 2 Connecting cable, one cable for each sensor head. • Variants: 10 m and 15 m.
10	Turntable	Position variable.
11	Sensor head	Can be plugged into adapter.
12	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 5: Overview of components at measurement bay

6. Planning the Excellence measurement bay version

6.1 Storage battery version

 The voltage supply for the sensor heads provided by replaceable storage batteries; data transmission is wireless.

6.1.1 Existing components

The following components are part of the storage battery version:

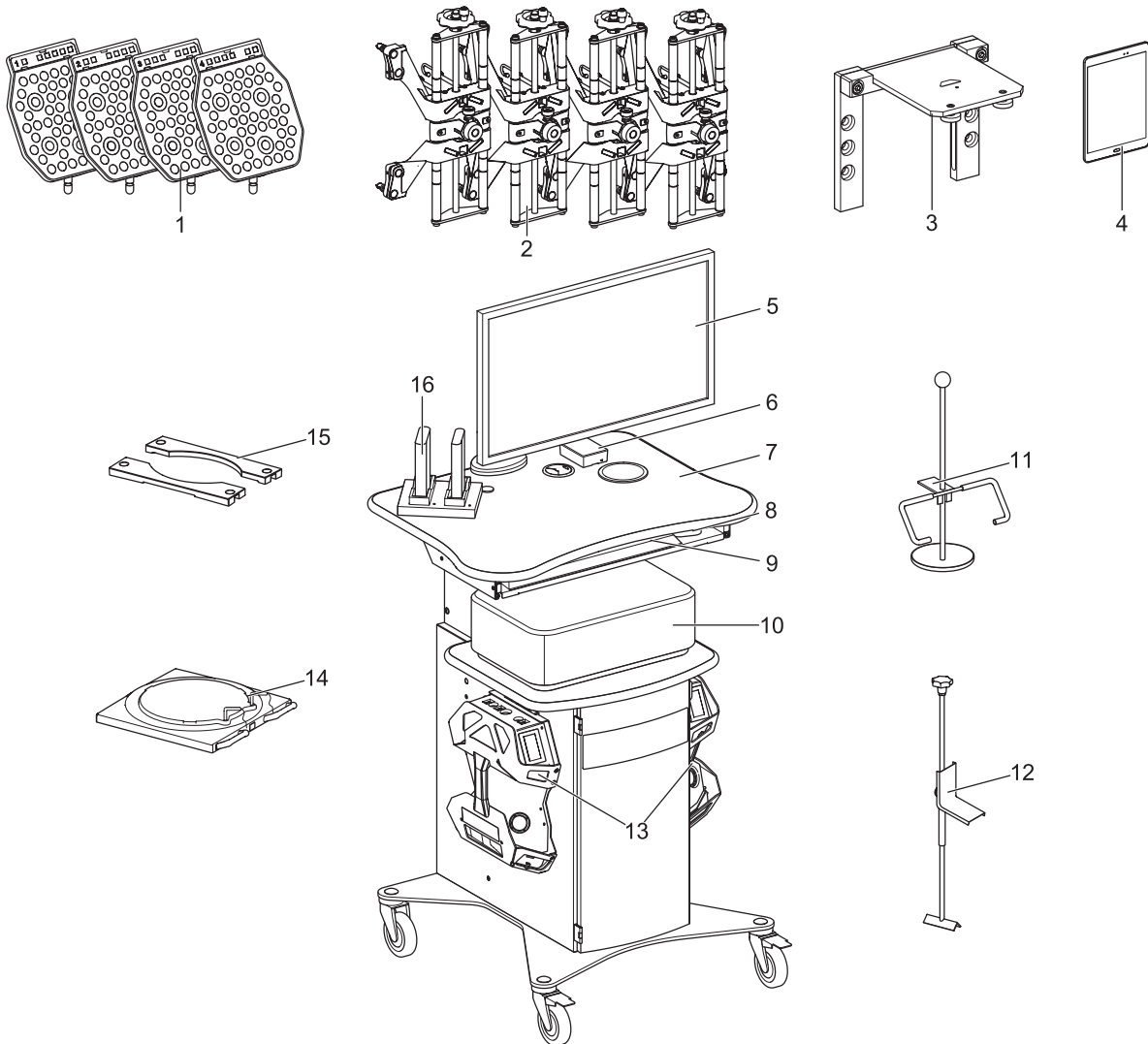


Abb. 8: Cable operation components

- 1 Measurement board (4 x)
- 2 Multi-Fit clamp (4 x)
- 3 Lift adaptation (2 x)
- 4 Tablet
- 5 Monitor (27")
- 6 Display module
- 7 Step trolley
- 8 Mouse

- 9 Keyboard
- 10 Printer
- 11 Steering wheel arrester
- 12 Brake clamp
- 13 Sensor head (2 x)
- 14 Turntable (2 x)
- 15 Filler (4 x)
- 16 Storage battery charging station, incl. 2 storage batteries

6.1.2 Installation diagram for 4-post lift

i **VLH 4740 LA** to measure vehicles with a short wheelbase (e.g. Smart), it is necessary to use turntables or short sliding plates at the rear axle.

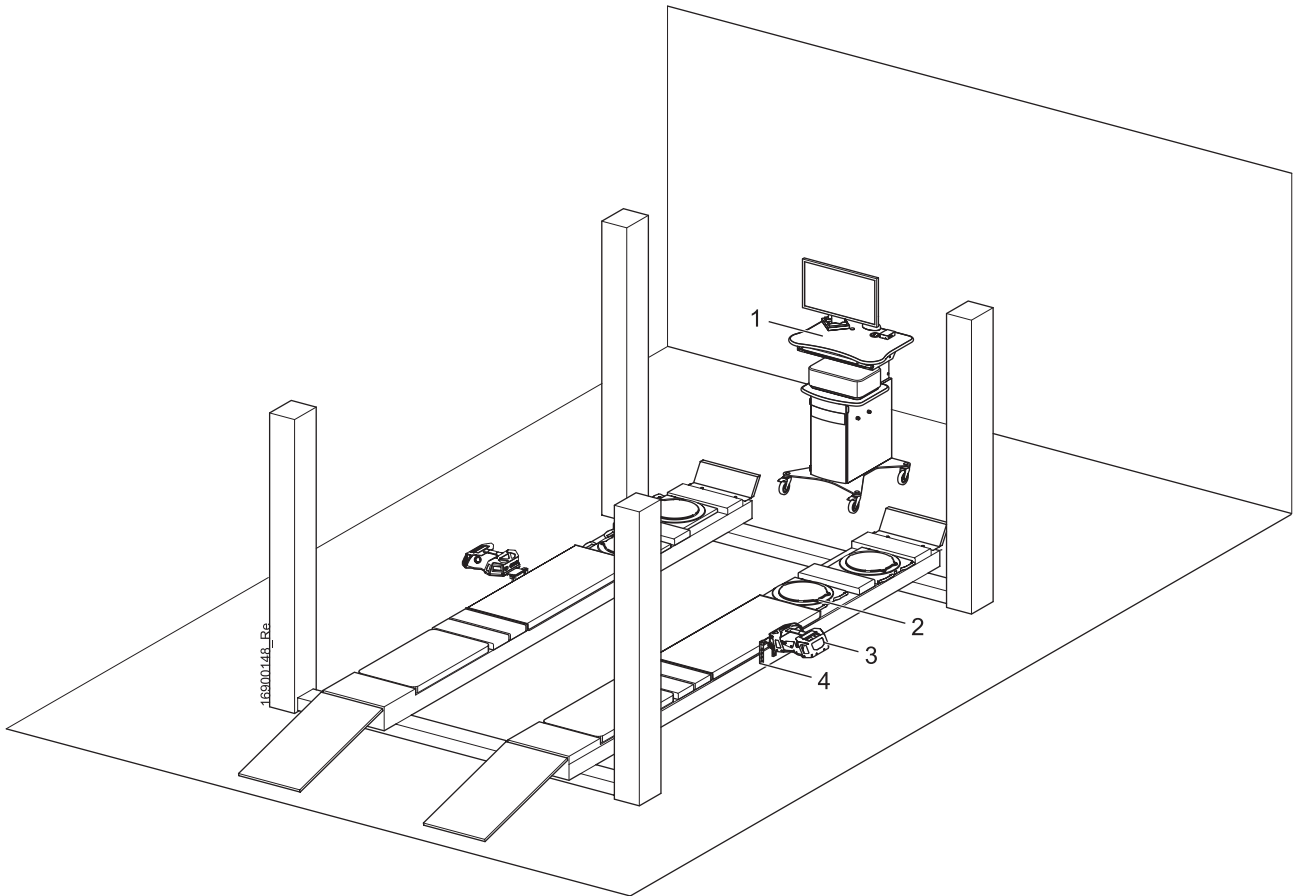


Abb. 9: Installation of components at the measurement bay

No.	Description	Comment
1	Step trolley	With the components: <ul style="list-style-type: none"> • Monitor (27 "). • Display module (Raspberry Pi, incl. USB stick, micro-SD card, power supply unit) with hook and loop strip as mounting aid. • Mouse (wireless, radio). • Keyboard (wireless, radio). • Sensor head mountings. • Printers. • Including outlet strip, customer must plan for connection possibility (outlet 230 V/50 Hz, 10 A).
2	Turntable	Position variable.
3	Sensor head	Can be plugged into adapter.
4	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 6: Overview of components at measurement bay

6.1.3 Installation diagram for scissor lift

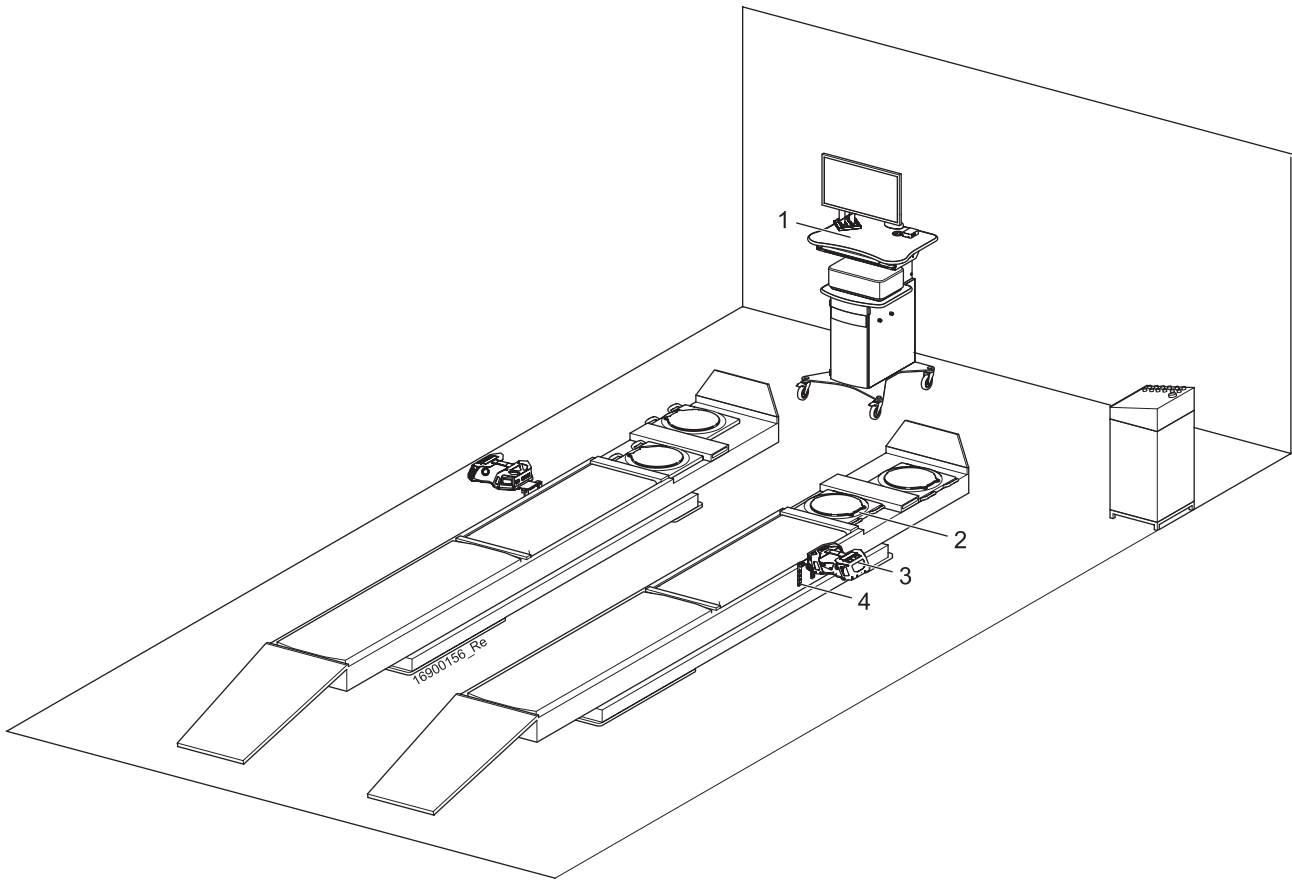



Abb. 10: Installation of components at the measurement bay

No.	Description	Comment
1	Step trolley	With the components: <ul style="list-style-type: none"> • Monitor (27 "). • Display module (Raspberry Pi (incl. USB stick, micro-SD card, power supply unit) with hook and loop strip as mounting aid. • Mouse (wireless, radio). • Keyboard (wireless, radio). • Sensor head mountings. • Printers. • Including outlet strip, customer must plan for connection possibility (outlet 230 V/50 Hz, 10 A).
2	Turntable	Position variable.
3	Sensor head	Can be plugged into adapter.
4	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 7: Overview of components at measurement bay

6.2 Cable operation version

 The voltage supply for the sensor heads is provided by a cable connection to a power box, data transmission is wireless.

6.2.1 Existing components

The following components are part of the cable operation version:

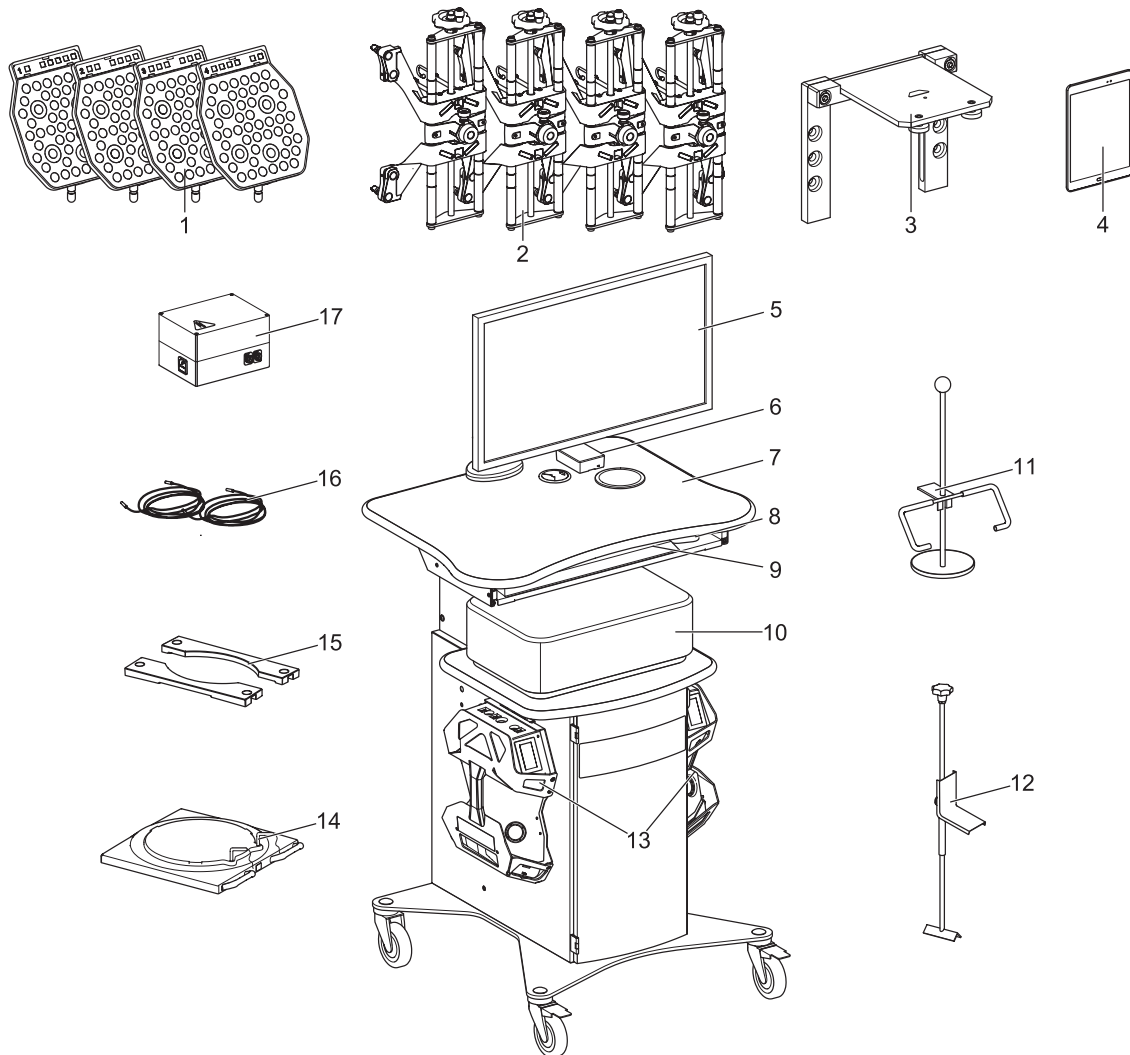


Abb. 11: Cable operation components

- 1 Measurement board (4 x)
- 2 Multi-Fit clamp (4 x)
- 3 Lift adaptation (2 x)
- 4 Tablet
- 5 Monitor (27")
- 6 Display module
- 7 Step trolley
- 8 Mouse
- 9 Keyboard
- 10 Printer
- 11 Steering wheel arrester
- 12 Brake clamp
- 13 Sensor head (2 x)
- 14 Turntable (2 x)
- 15 Filler (4 x)
- 16 Sensor head connecting cable (2 x)
- 17 Power box (mounting strip included in scope of delivery)

6.2.2 Installation diagram for 4-post lift

VLH 4740 LA to measure vehicles with a short wheelbase (e.g. Smart), it is necessary to use turntables or short sliding plates at the rear axle.

The selected position of component no. 2 is a recommendation and can be specified as desired by the customer.

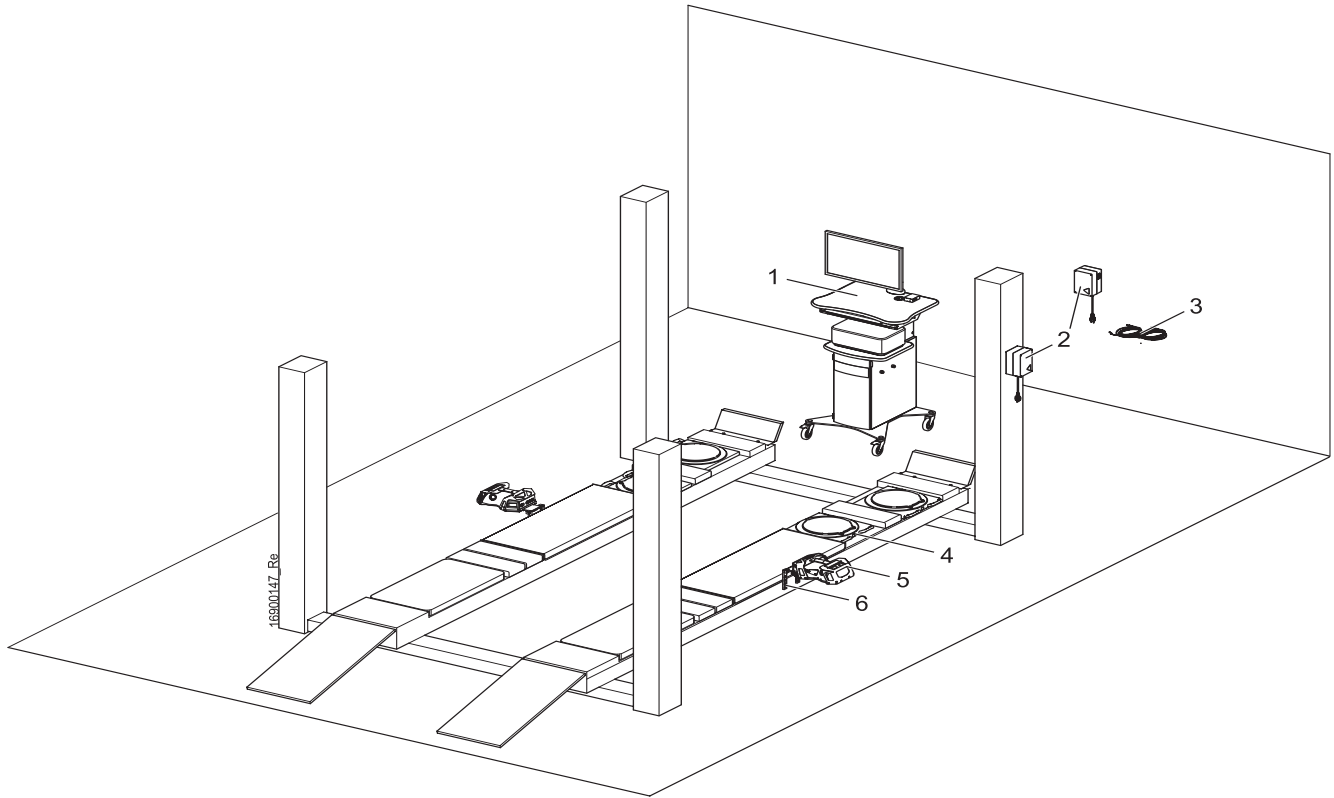



Abb. 12: Installation of components at the measurement bay

No.	Description	Comment
1	Step trolley	With the components: <ul style="list-style-type: none"> • Monitor (27 "). • Display module (Raspberry Pi, incl. USB stick, micro-SD card, power supply unit) with hook and loop strip as mounting aid. • Mouse (wireless, radio). • Keyboard (wireless, radio). • Sensor head mountings. • Printers. • Outlet strip with connection cable.
2	Power box	<ul style="list-style-type: none"> • Sensor head voltage supply. • Including power supply cable with grounding-type plug, length = 1.8 m, customer must plan for connection possibility (outlet 230 V/50 Hz, 10 A). • Mounting on wall or lift post by means of mounting strip possible.
3	Connecting cable	<ul style="list-style-type: none"> • Connection from power box to the sensor heads (installation of cable in lift). • 2 Connecting cable, one cable for each sensor head. • Variants: 10 m and 15 m.
4	Turntable	Position variable
5	Sensor head	Can be plugged into adapter.
6	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 8: Overview of components at measurement bay

6.2.3 Installation diagram for scissor lift

 The selected position of component no. 2 is a recommendation and can be specified as desired by the customer.

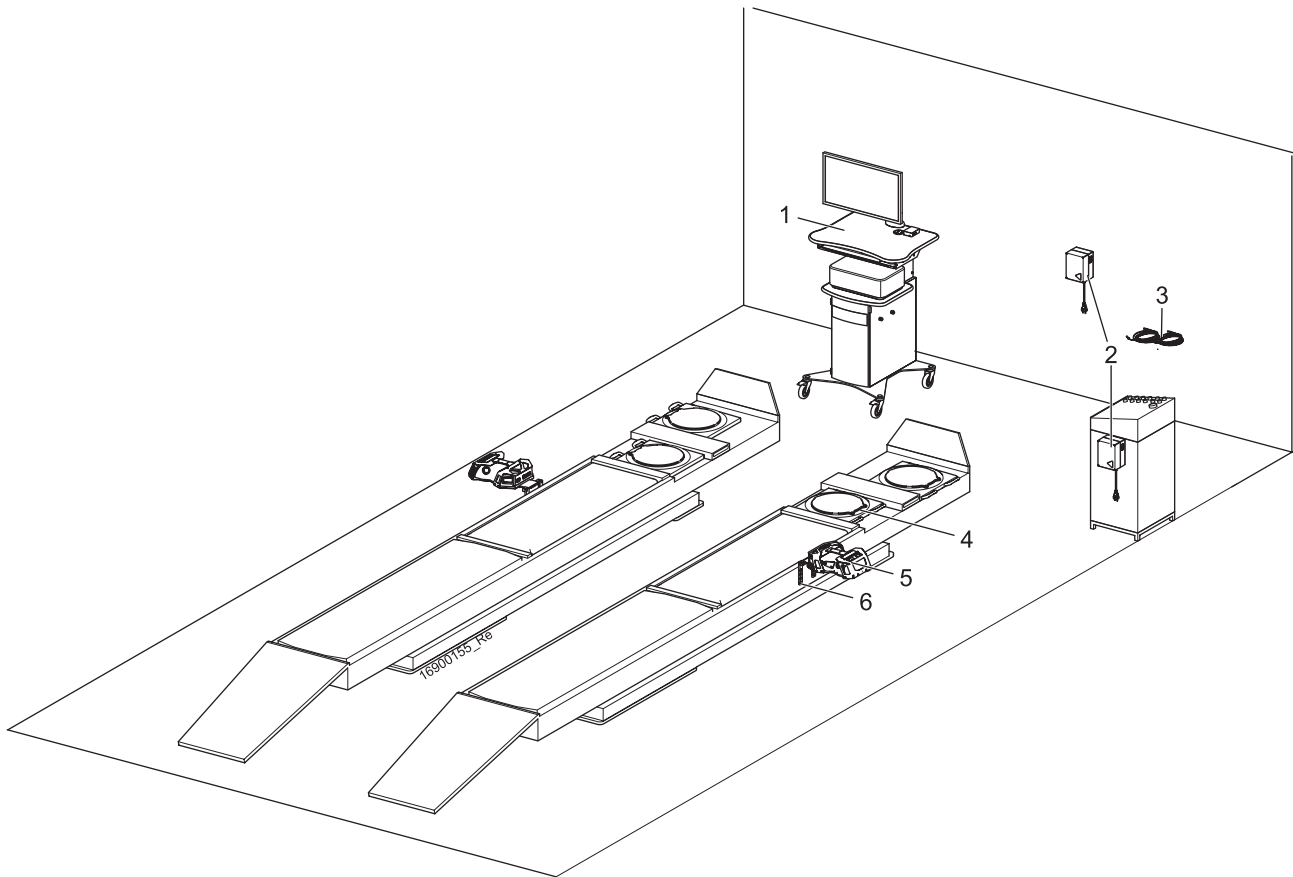



Abb. 13: Installation of components at the measurement bay


No.	Description	Comment
1	Step trolley	With the components: <ul style="list-style-type: none"> • Monitor (22 "). • Display module (Raspberry Pi, incl. USB stick, micro-SD card, power supply unit with hook and loop strip as mounting aid). • Mouse (wireless, radio). • Keyboard (wireless, radio). • Sensor head mountings. • Printers. • Outlet strip with connection cable.
2	Power box	<ul style="list-style-type: none"> • Sensor head voltage supply. • Including power supply cable with grounding-type plug, length = 1.8 m, customer must plan for connection possibility (outlet 230 V/50 Hz, 10 A). • Mounting on wall or lift control unit by means of mounting strip possible.
3	Connecting cable	<ul style="list-style-type: none"> • Connection from power box to the sensor heads (installation of cable in lift). • 2 Connecting cable, one cable for each sensor head. • Variants: 10 m and 15 m.
4	Turntable	Position variable
5	Sensor head	Can be plugged into adapter.
6	Adapter	<ul style="list-style-type: none"> • Fixed mounting on lift. • Folding.

Tab. 9: Overview of components at measurement bay

7. Dimension sheet for 4-post and scissor lifts

 This dimension sheet does not apply to 4-post lift VLH 4740 LA and scissor lift VLS 5450 LA.

 Prerequisite: To perform a correct measurement (steering angle and setting required), the wheels of the front and rear axles are completely on the turntable and sliding base.

 Sensor head position: In the case of fixed turntable position on the lift, the dimensioning must take into account which vehicles (wheelbases) the operator mainly measures.

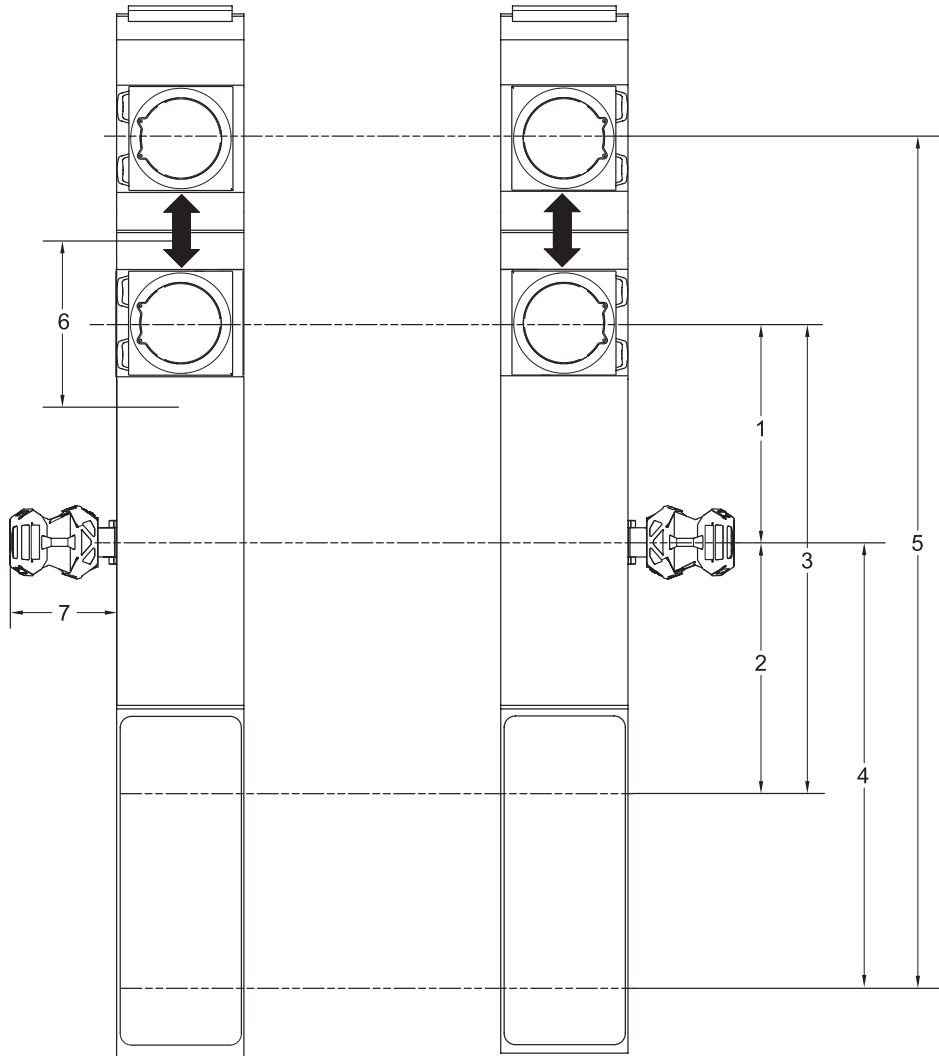



Abb. 14: Dimensions on lifts


No.	Description	Value [mm]
1	Min. safe distance between sensor head and turntable (front axle)	933 ± 2
2	Min. safe distance between sensor head and sliding base (rear axle)	932 ± 2
3	Min. wheelbase	1865 ± 2
4	Max. safe distance between sensor head and sliding base (rear axle)	3500
5	Max. wheelbase	7000
6	Rolling distance	500
7	Safe distance between sensor head and runway	452 ± 2

Tab. 10: Overview of dimensions on lifts


8. Lift adaptation

➤ The lift adaptation is supplied in individual parts and assembled on-site in accordance with the drawing see page 65.

 The lift adaptation is attached to the lift by means of bolted connections.

 The sensor heads are plugged into the lift adaptation and secured.

 Assembly only by authorized service personnel.

 The lift adaptation is attached to the lift in a folded condition and is then unfolded to install the sensor head.

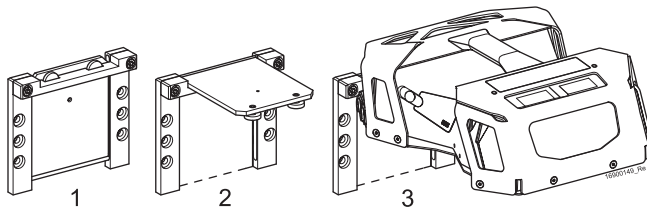


Abb. 15: Lift adaptation

- 1 Adaptation folded
- 2 Adaptation unfolded
- 3 Adaptation with sensor head

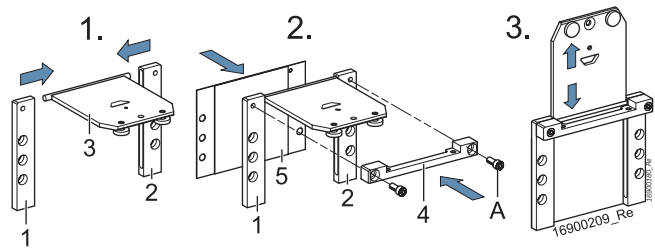


Abb. 17: Lift adapter assembly

- 1 Left guide
- 2 Right guide
- 3 Base plate
- 4 Stop
- 5 Mounting plate (*)


(*) Included in the scope of delivery from mid-2021

Item	Type of attachment	Quantity	Size [mm]	Tool
A		2x	M8 x 20	 Size 6

Tab. 11: Fastening materials

1. Put the left guide (item 1), the right guide (item 3) and the base plate (item 2) together.
2. Position the mounting plate (item 5) between the guides. Use the fastening screws (item A) to hand-tighten the stop (item 4).
3. It must be possible to move the base plate up and down along the guides.

8.1 Assembly

 From mid-2021, a mounting plate will be included in the lift adapter's scope of delivery.

 Fit the mounting plate with the adapter to the lift.

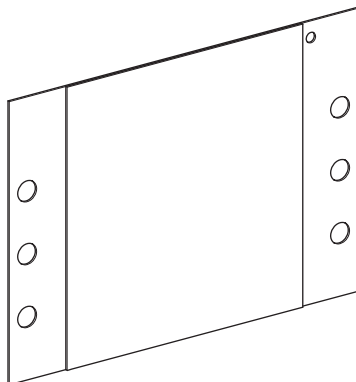



Abb. 16: Mounting plate

 The mounting plate facilitates adapter installation:

- Guiding function when folding in the base plate
- Assembly of individual components (guide, stop)
- Fitting to lift.

8.2 Adjustment

8.2.1 Adjusting the stop

Without mounting plate

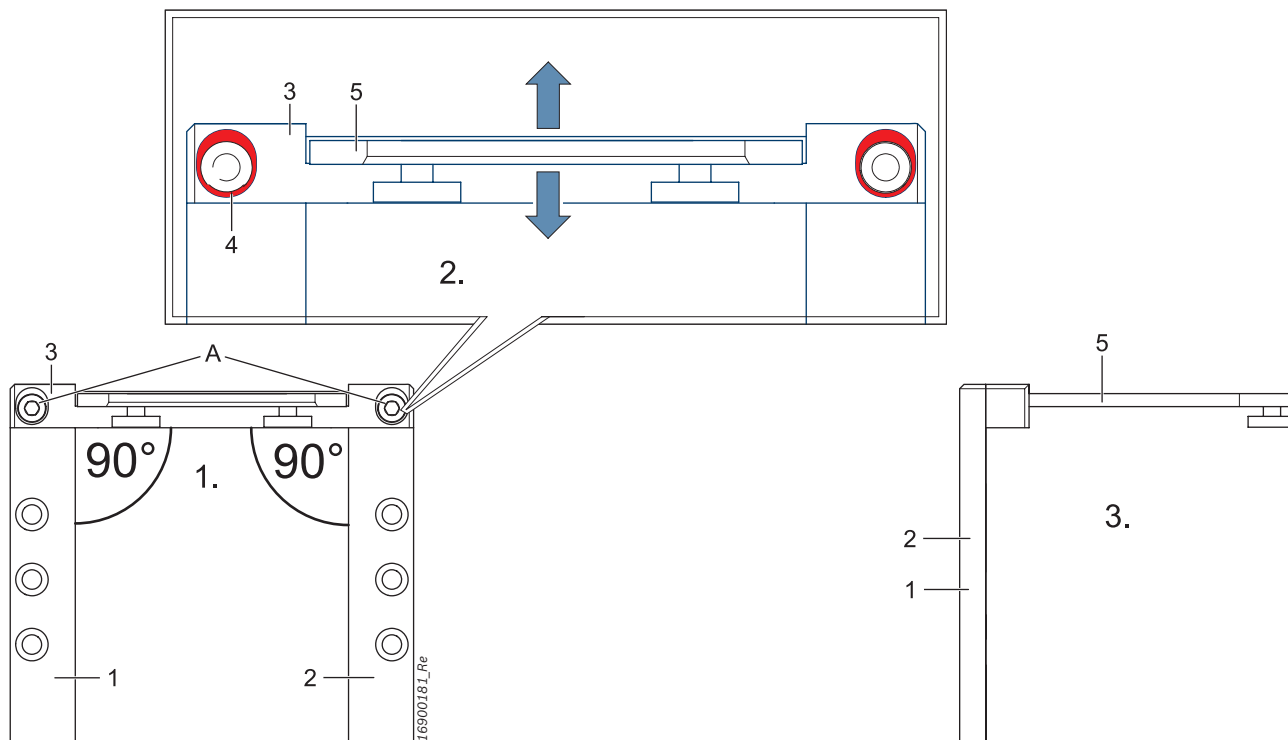



Abb. 18: Adjustment of lift adapter stop


- 1 Left guide
- 2 Right guide
- 3 Stop
- 4 Stop (oblong hole)
- 5 Base plate

Item	Type of attachment	Quantity	Size [mm]	Tool
A		2x	M8 x 20	 Size 6

Tab. 12: Fastening materials

1. Set the right guide (item 1) and the left guide (item 2) at a 90° angle to the stop (item 3), and hand-tighten the fastening screws (item A).

-  The oblong holes (item 4, marked) in the stop make it possible to set the base plate's angle.
 2. Move the stop (item 3) around the oblong holes (item 4) until the base plate (item 5) is positioned at a 90° angle to the guides.

-  Check: fold in the base plate, and lightly move it up and down along the guide (right and left).
 3. After adjustment is finished, tighten both fastening screws (item A).

With mounting plate

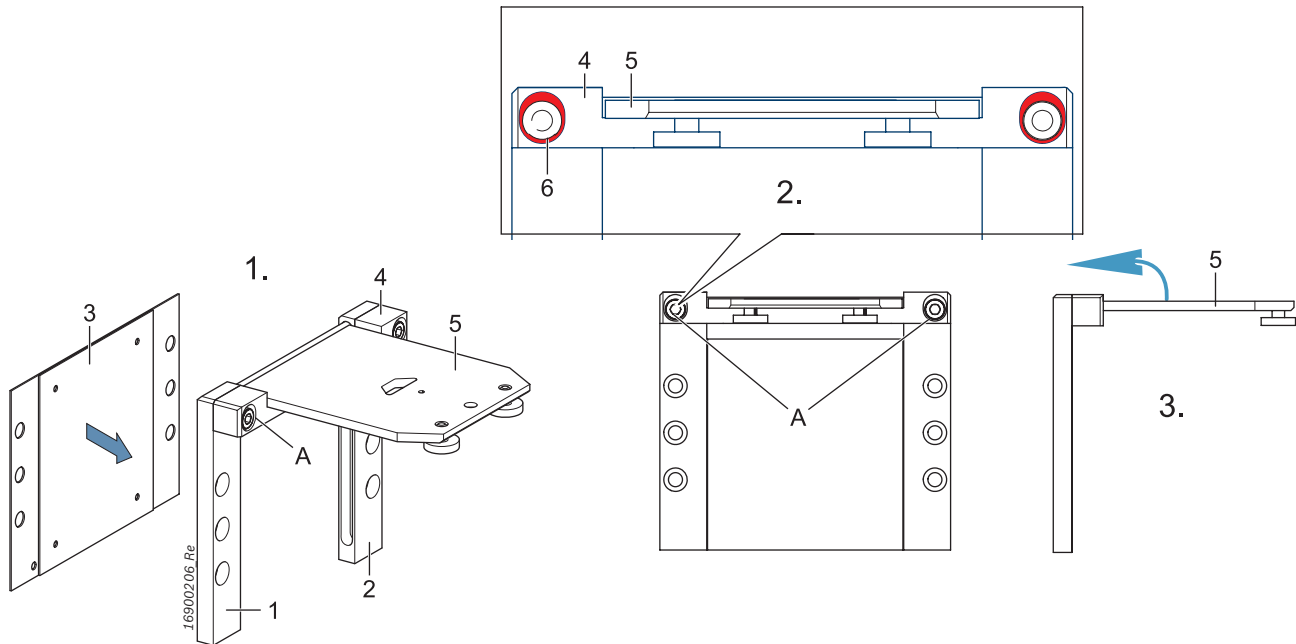




Abb. 19: Lift adapter, stop adjustment

- 1 Left guide
- 2 Right guide
- 3 Mounting plate
- 4 Stop
- 5 Base plate
- 6 Stop (oblong hole)

1. Position the base plate (item 3) on the right guide (item 1) and the left guide (item 2), and slide it up or down until the holes in the guides and the mounting plate are aligned. Use the fastening screws (item A) to hand-tighten the stop (item 4) with the base plate (item 5) on the guides.


 The oblong holes (item 6, marked) in the stop make it possible to adjust the angle of the base plate (item 5).

2. Move the stop (item 4) around the oblong holes (item 6) until the base plate (item 5) is positioned at a 90° angle to the guides.

 Check: fold in the base plate, and lightly move it up and down along the guide (right and left).

3. After adjustment is finished, tighten both fastening screws (item A).

8.2.2 Adjusting the base plate with the sensor head

 The setscrews in the stop can be used for final adjustment of the two sensor heads' visual contact.

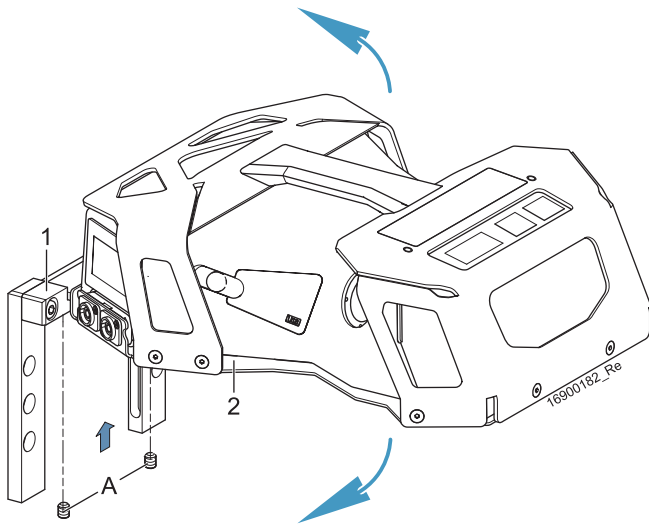



Abb. 20: Adjustment of lift adapter base plate with sensor head

- 1 Stop
- 2 Base plate with sensor head


Item	Type of attachment	Quantity	Size [mm]	Tool
A		2x	M8 x 10	 Size 4

Tab. 13: Fastening materials

 The setscrews will be part of the scope of delivery going forward.

1. Screw the setscrews (item A) into the threaded holes in the stop.
2. Turning the setscrews will change the angle on the base plate (item 2) and the orientation of the sensor head along with it.

8.3 Installation variants with installation set

 From mid-2021, the lift adapter will include an additional installation set (1 690 201 081) so the Q.Lign can be fitted to other lifts or devices.

8.3.1 T-beam installation variant

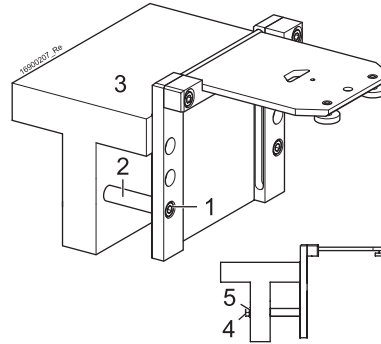


Abb. 21: Lift adapter, T-beam installation

- 1 Cheese head bolt, M8 x 120 mm, (2 x)
- 2 Spacer tube, 14 x 2, (2 x)
- 3 T-beam
- 4 Hex nut, M8 (2 x)
- 5 Washer, 8.4 mm, (2 x)

➤ Fit the adapter to the T-beam or a similar structure as shown in the illustration. If necessary, shorten the spacer tube (item 2) and use the cheese head bolts (item 1) to secure the adapter on the lift.

8.3.2 Wheel-free scissor lift installation variant

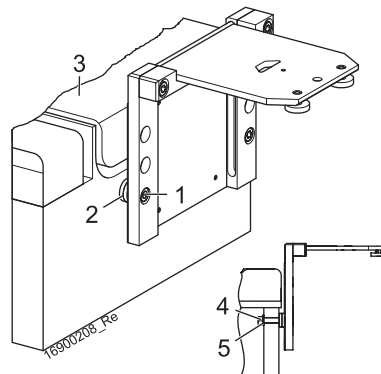


Abb. 22: Lift adapter, installation on lift with wheel-free scissor lift

- 1 Cheese head bolt, M8 x 20 / M8 x 45 / M8 x 90, (2 x)
- 2 Spacer washer 8/200 (2 x)
- 3 Wheel-free scissor lift
- 4 Hex nut, M8 (2 x)
- 5 Washer, 8.4 mm, (2 x)

➤ Fit the adapter to the lift with wheel-free scissor lift as shown in the illustration. Put the spacer washers (item 2) in position, and install the adapter to the lift in such a way that it does not touch the wheel-free scissor lift.

8.4 Installation on 4-post lifts and scissor lifts

- Determine the position of the lift adapter on the existing lift, see sec. 7.

! Note: Do not attach the lift adapter to any moving parts of the runways, e.g. wheel-free scissor lift.

8.4.1 Work step 1

1. Measure from the defined position of the turntable (Pos. 3) and make a vertical mark (item 1) on the runway using a steel square (90°).

I Note: Minimum dimension for item A = 933 ± 2 mm.

2. Using a tape measure, measure from the first mark (Pos. 1) and make a second vertical mark (Pos. 2) at a distance of **166 mm** (Pos. B) on the runway using a steel square (90°).

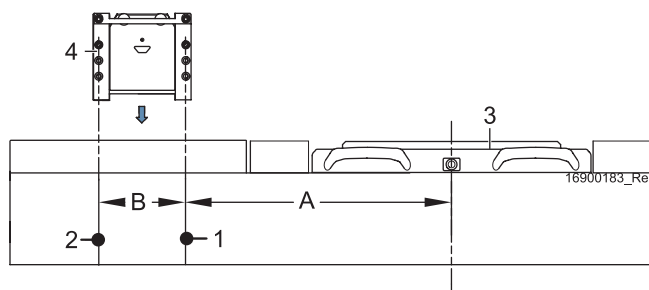


Abb. 23: Horizontal dimension on runway

- 1 First mark (vertical)
- 2 Second mark (vertical)
- 3 Turntable
- 4 Lift adapter.

8.4.2 Work step 2

1. Place adaptation (Pos. 1) on the runway over the marked lines (Pos. 3) and level using a spirit level (Pos. 4).
2. Place the tape measure (Pos. 5) vertically on the runway surface (Pos. 2).
3. Position the upper edge of the adaptation at **30 mm** (Pos. C) above the runway surface.
4. Mark the position of the holes (Pos. 6) on the runway.

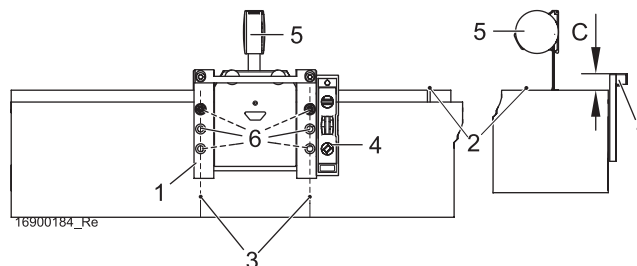


Abb. 24: Vertical dimension

- 1 Lift adaptation
- 2 Runway surface
- 3 Marked lines
- 4 Spirit level
- 5 Tape measure

8.4.3 Work step 3

1. Use a center punch to mark the positions (Pos. 3) on the runway (Pos. 1).
2. Drill holes (2 x) using a twist drill $\varnothing 6.8$ mm.
3. Tap threads **M 8** in the holes.
4. Both the lift adaptation (Pos. 2) to the runway loosely using fastening screws (Pos. A).

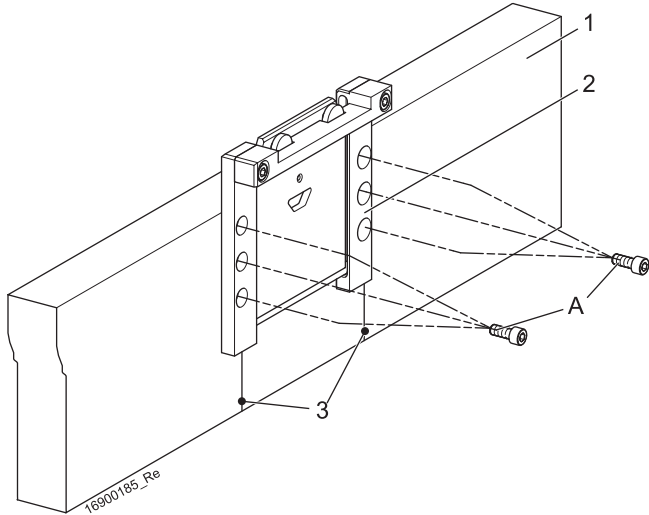


Abb. 26: Assembling the lift adaptation

- 1 Lift runway
- 2 Lift adaptation
- 3 Marked lines

Item	Type of attachment	Quantity	Size [mm]	Tool
A		2x	M8 x 20	 Size 6

Tab. 14: Fastening materials

5. Using a spirit level (Pos. 2), level the lift adaptation (Pos. 1) and tighten the screws (Pos. A).

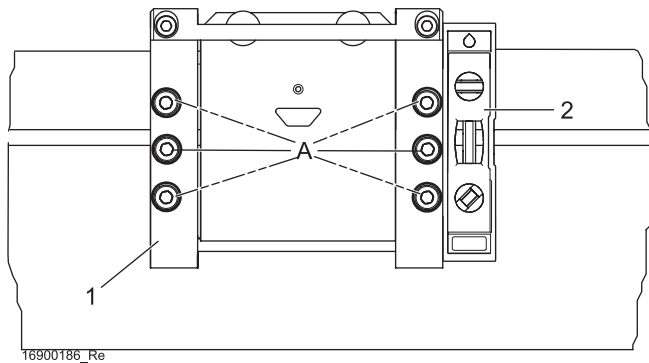


Abb. 27: Leveling the lift adaptation

6. Repeat the dimension determination on the 2nd runway by following the work steps in the same order.

! Note: Determine the dimensions and assemble carefully on both runways in order to ensure visual contact by both sensor heads.

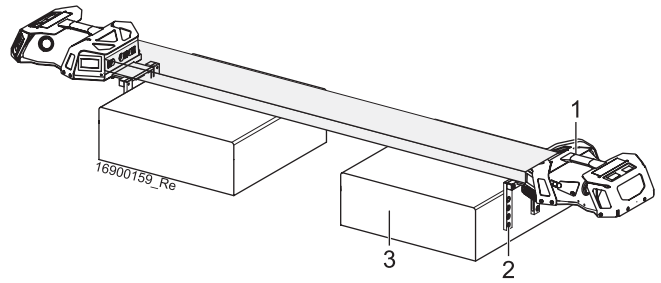


Abb. 25: Sensor heads at same level

- 1 Sensor head (2 x)
- 2 Lift adaptation (2 x)
- 3 Runway (2 x)

i The further installation of Q.Lign is described in the initial commissioning instructions (document number 1 690 206 002)

8.5 Dimensioning at 4-post lift VLH 4740 LA

Use of the technical drawing in the annex is possible to determine the dimensions of the lift, see page 63.

The dimensions of the lift adaptation at the runways are determined in the following steps:

Measuring and marking:

- Distance between cross member and lift adaptation (Pos. A),
- Distance between holes in lift adaptation (Pos. B).
- Distance between runway surface and lift adaptation (Pos. C).

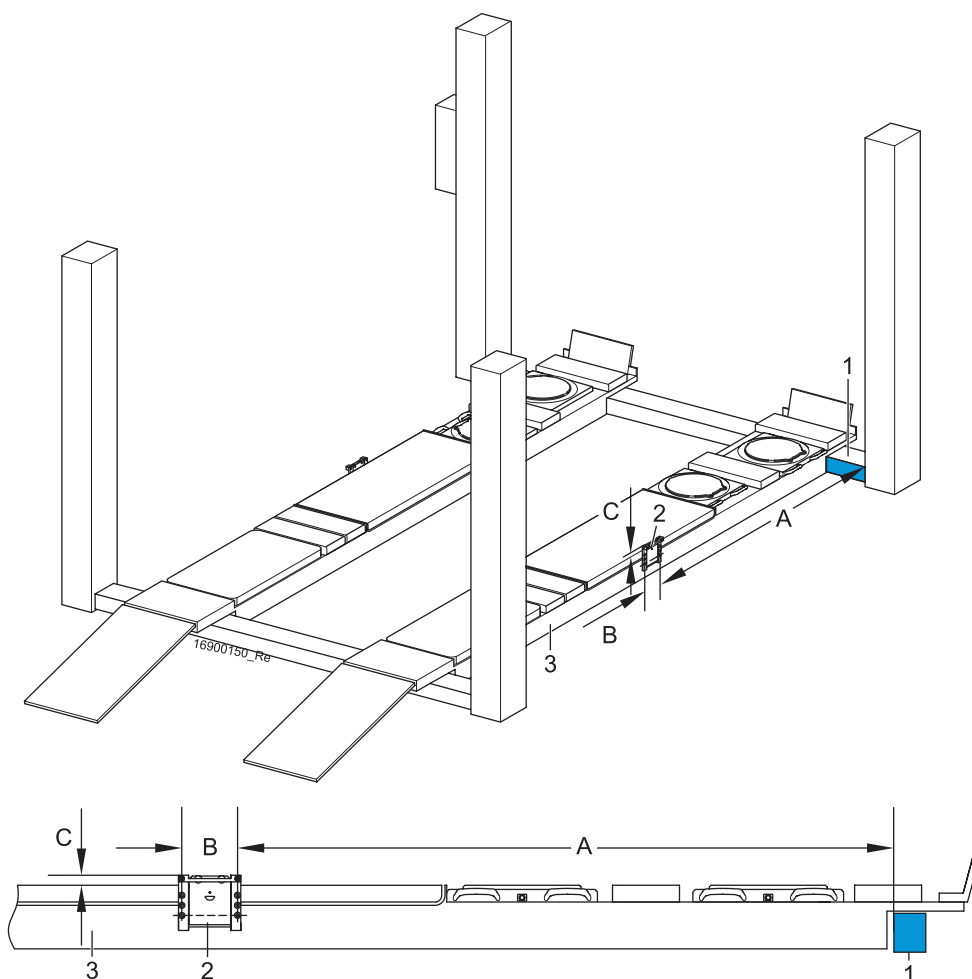


Abb. 28: Dimensions at lift

- 1 Cross member
- 2 Lift adaptation
- 3 Runway

Item	Dimensions	Value [mm]
A	Distance between cross member and lift adaptation	1810 ± 2
B	Distance between holes in adaptation (horizontal)	166
C	Distance between runway surface and lift adaptation	30 ± 1

Tab. 15: Overview of dimensions at lift

8.6 Assembly at 4-post lift VLH 4740 LA

8.6.1 Work step 1

- Using a tape measure, measure from the inside of the cross member (Pos. 3) on the runway (Pos. 5) and make a vertical mark (Pos. 1) at a distance of **1810 mm** (Pos. A) on the runway using a steel square (90°).
- Using a tape measure, measure from the first mark (Pos. 1) and make a second vertical mark (Pos. 2) at a distance of **166 mm** (Pos. B) on the runway using a steel square (90°).

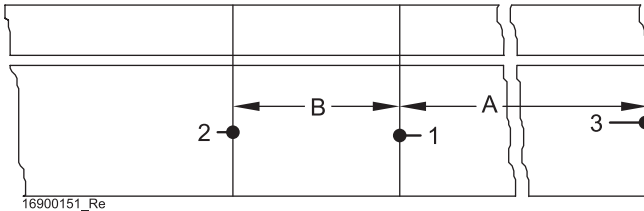
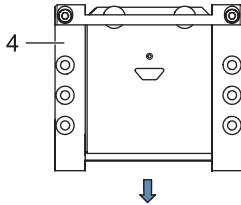


Abb. 29: Horizontal dimension on runway

- 1 First mark (vertical)
- 2 Second mark (vertical)
- 3 Cross member
- 4 Lift adaptation

8.6.2 Work step 2

- Place adaptation (Pos. 1) on the runway over the marked lines (Pos. 3) and level using a spirit level (Pos. 4).
- Place the tape measure (Pos. 5) vertically on the runway surface (Pos. 2).
- Position the upper edge of the adaptation at **30 mm** (Pos. C) above the runway surface.
- Mark the position of the bottom holes (Pos. 6) on the runway.

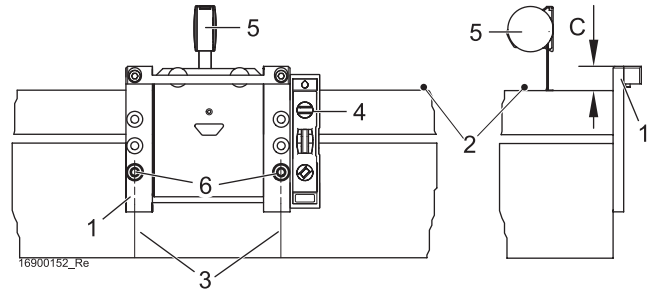


Abb. 30: Vertical dimension on runway

- 1 Lift adaptation
- 2 Runway surface
- 3 Marked lines
- 4 Spirit level
- 5 Tape measure
- 6 Hole in lift adaptation

8.6.3 Work step 3

1. Use a center punch to mark the positions (Pos. 3) on the runway (Pos. 1).
2. Drill holes (2 x) using a twist drill $\varnothing 6.8 \text{ mm}$.
3. Tap threads **M 8** in the holes.
4. Both the lift adaptation (Pos. 2) to the runway loosely using fastening screws (Pos. A).

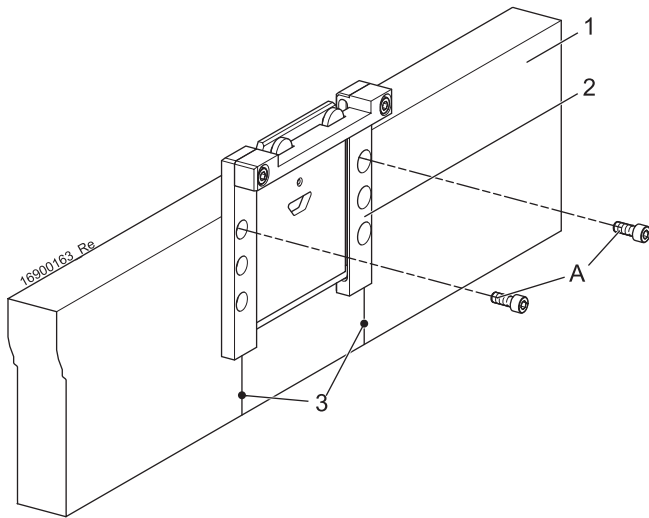



Abb. 31: Assembling the lift adaptation

- 1 Lift runway
- 2 Lift adaptation
- 3 Marked lines

Item	Type of attachment	Quantity	Size [mm]	Tool
A		2x	M8 x 20	 Size 6

Tab. 16: Fastening materials

5. Using a spirit level (Pos. 2), level the lift adaptation (Pos. 1) and tighten the screws (Pos. A).

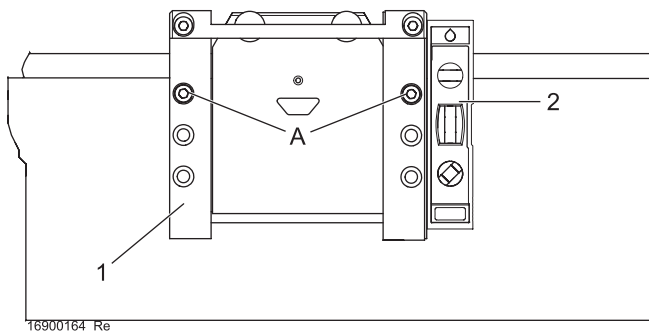


Abb. 32: Leveling the lift adaptation

6. Repeat the dimension determination on the 2nd runway by following the work steps in the same order.

! Note: Determine the dimensions and assemble carefully on both runways in order to ensure visual contact by both sensor heads.

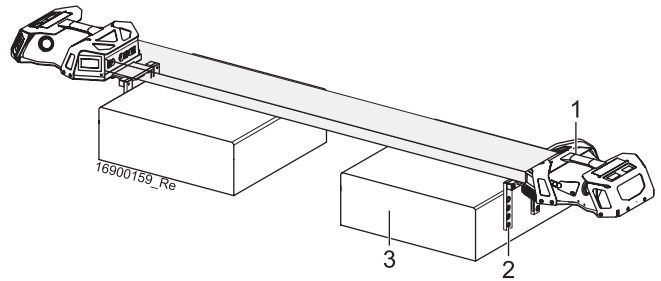




Abb. 33: Sensor heads at same level


- 1 Sensor head (2 x)
- 2 Lift adaptation (2 x)
- 3 Runway (2 x)

i The further installation of Q.Lign is described in the initial commissioning instructions (document number 1 690 206 002).

8.7 Dimensioning at Scissor lift VLS 5450 LA

 Use of the technical drawing in the annex is possible to determine the dimensions of the lift, see page 64.

 The dimensions of the lift adaptation at the runways are determined in the following steps:

 Measuring and marking:

- **Distance between runway and lift adaptation (Pos. A),**
- **Distance between holes in lift adaptation (Pos. B).**
- **Distance between runway surface and lift adaptation (Pos. C).**

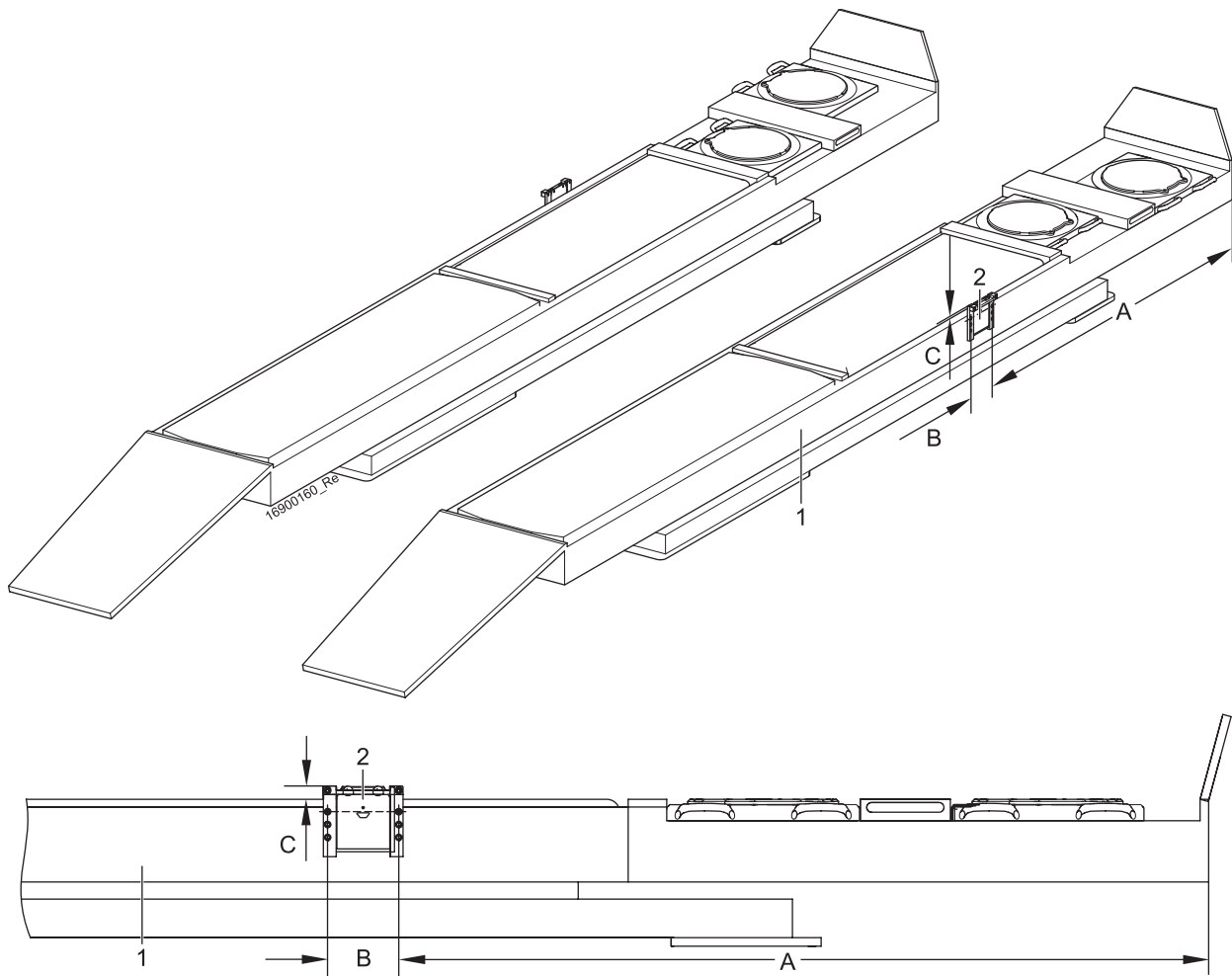


Abb. 34: Dimensions at lift

1 Runway

2 Lift adaptation

Item	Dimensions	Value [mm]
A	Distance between runway and lift adaptation	1890 ± 2
B	Distance between holes in adaptation (horizontal)	166
C	Distance between runway surface and lift adaptation	30 ± 1

Tab. 17: Overview of dimensions at lift

8.8 Assembly at Scissor lift VLS 5450 LA

8.8.1 Work step 1

- Using a tape measure, measure from the outer edge of the runway (Pos. 3) and make a vertical mark (Pos. 1) at a distance of **1890 mm** (Pos. A) using a steel square (90°).
- Using a tape measure, measure from the first mark (Pos. 1) and make a second vertical mark (Pos. 2) at a distance of **166 mm** (Pos. B) using a steel square (90°).

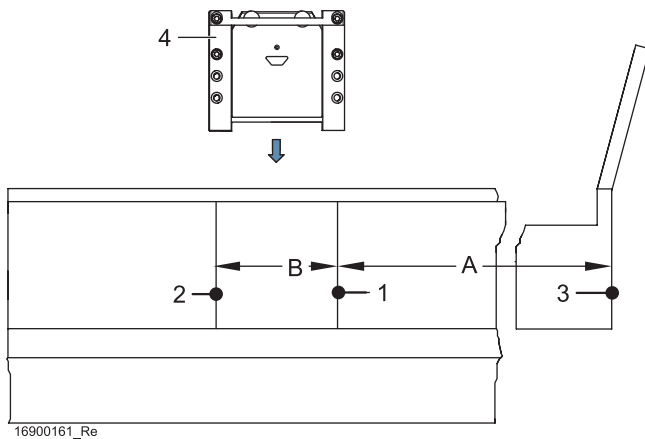


Abb. 35: Horizontal dimension

- 1 First mark (vertical)
- 2 Second mark (vertical)
- 3 Outer edge of runway
- 4 Lift adaptation

8.8.2 Work step 2

- Place adaptation (Pos. 1) on the runway over the marked lines (Pos. 3) and level using a spirit level (Pos. 4).
- Place the tape measure (Pos. 5) vertically on the runway surface (Pos. 2).
- Position the upper edge of the adaptation at **30 mm** (Pos. C) above the runway surface.
- Mark the position of the top holes (Pos. 6) on the runway.

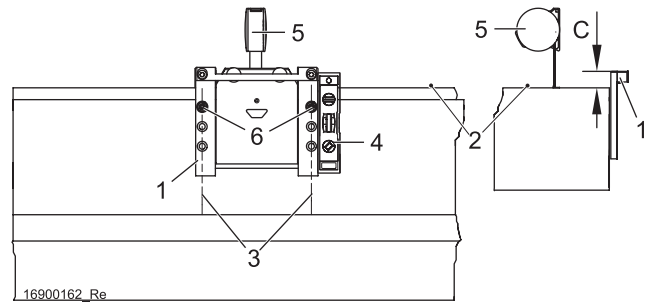


Abb. 36: Vertical dimension

- 1 Lift adaptation
- 2 Runway surface
- 3 Marked lines
- 4 Spirit level
- 5 Tape measure

8.8.3 Work step 3

1. Use a center punch to mark the positions (Pos. 3) on the runway (Pos. 1).
2. Drill holes (2 x) using a twist drill $\varnothing 6.8$ mm.
3. Tap threads **M 8** in the holes.
4. Both the lift adaptation (Pos. 2) to the runway loosely using fastening screws (Pos. A).

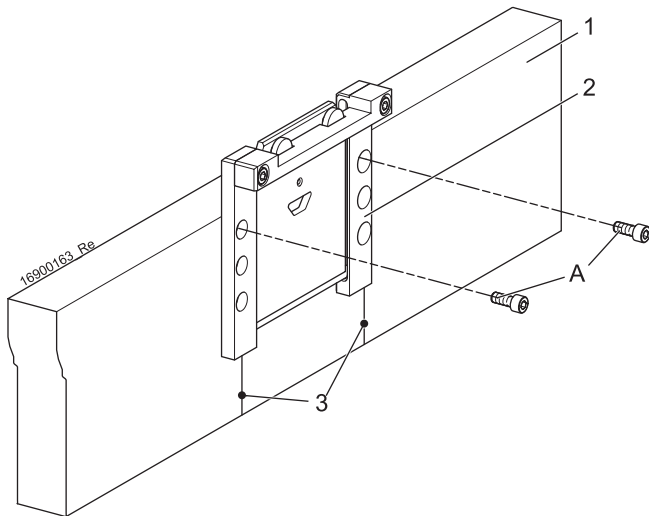


Abb. 38: Assembling the lift adaptation

- 1 Lift runway
- 2 Lift adaptation
- 3 Marked lines

Item	Type of attachment	Quantity	Size [mm]	Tool
A		2x	M8 x 20	 Size 6

Tab. 18: Fastening materials

5. Using a spirit level (Pos. 2), level the lift adaptation (Pos. 1) and tighten the screws (Pos. A).

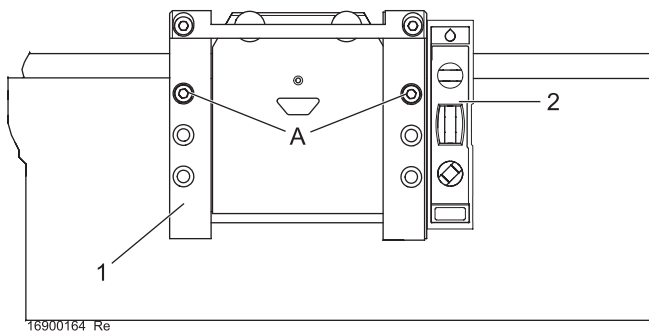


Abb. 39: Leveling the lift adaptation

6. Repeat the dimension determination on the 2nd runway by following the work steps in the same order.

! Note: Determine the dimensions and assemble carefully on both runways in order to ensure visual contact by both sensor heads.

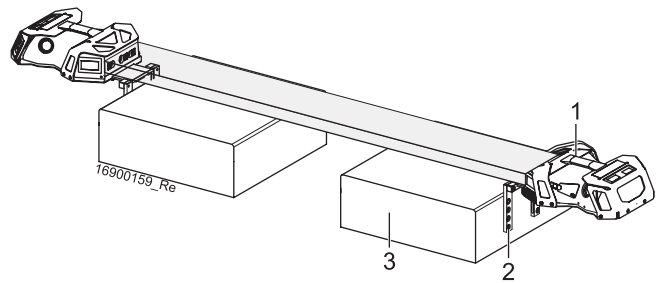


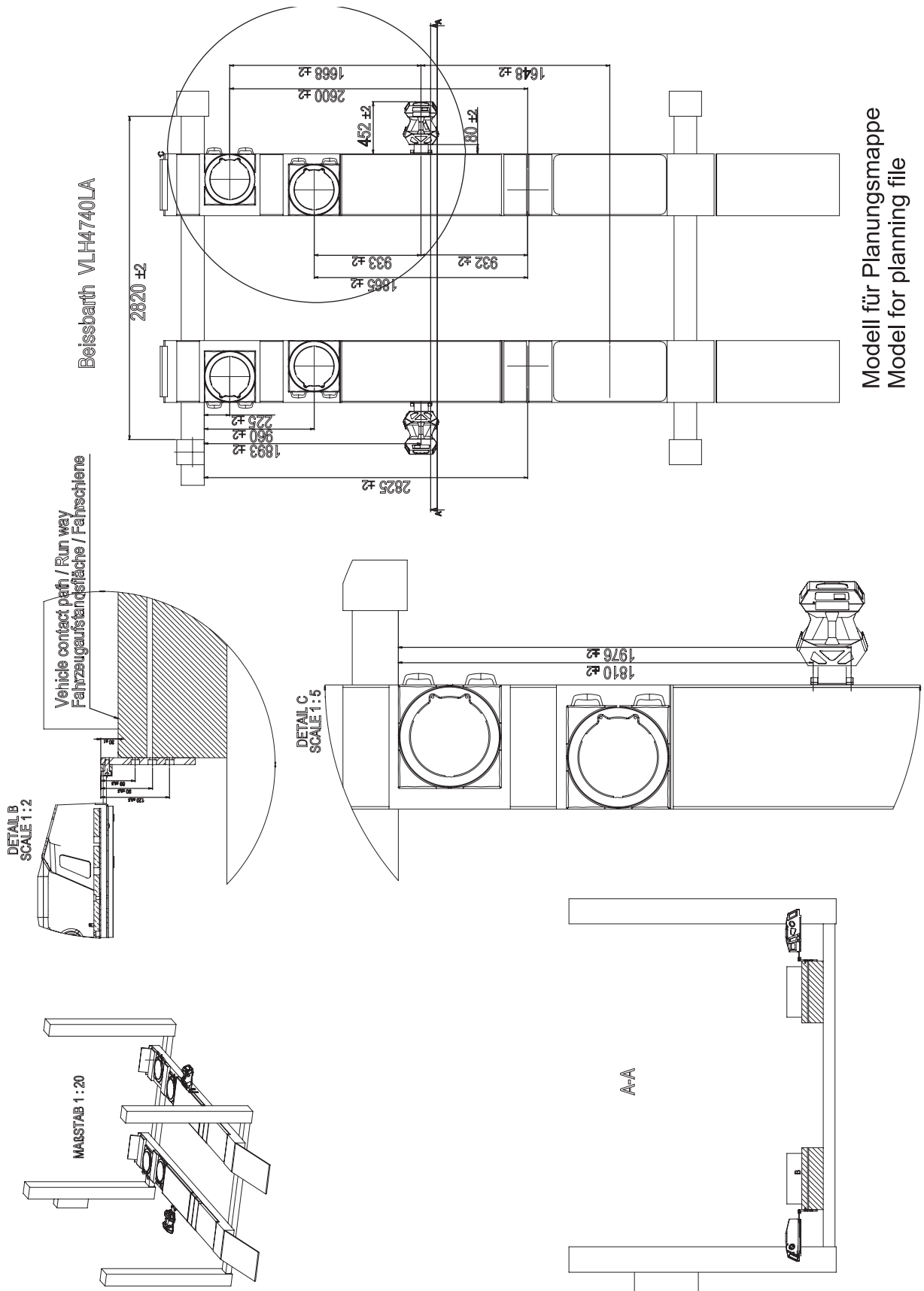
Abb. 37: Sensor heads at same level

- 1 Sensor head (2 x)
- 2 Lift adaptation (2 x)
- 3 Runway (2 x)

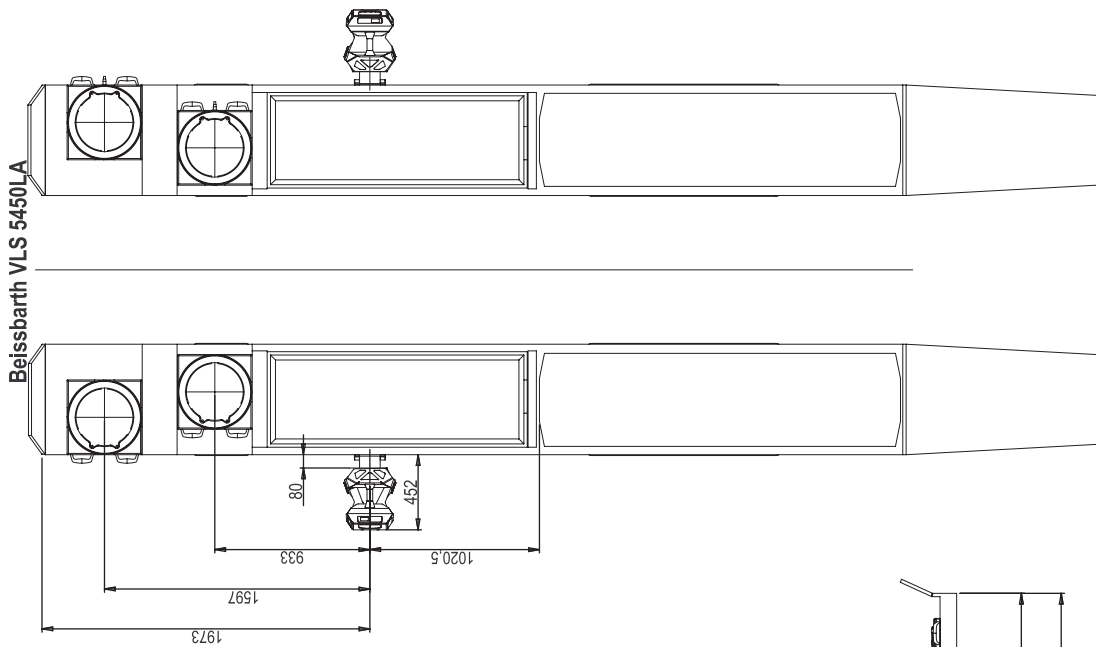
i The further installation of Q.Lign is described in the initial commissioning instructions (document number 1 690 206 002)

9. Annex

9.1 Dimensions VLH 4740 LA

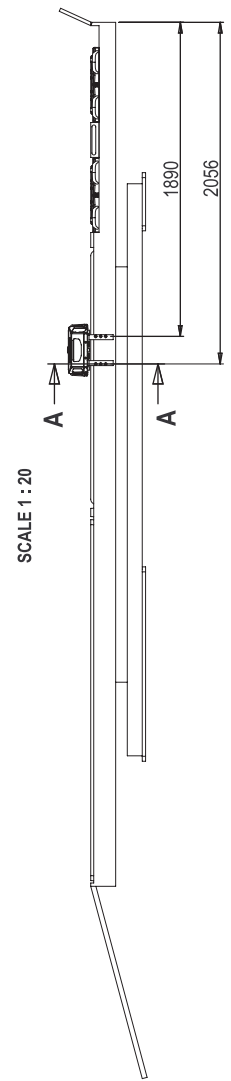
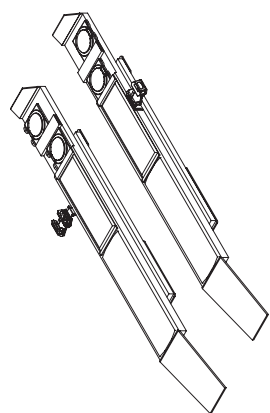
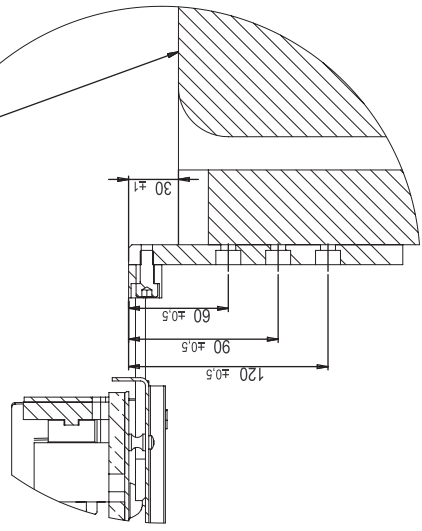


9.2 Dimensions VLS 5450 LA



DETAIL B
SCALE 1 : 2

Vehicle contact path / Run way
Fahrzeugaufstandsfläche / Fahrschiene

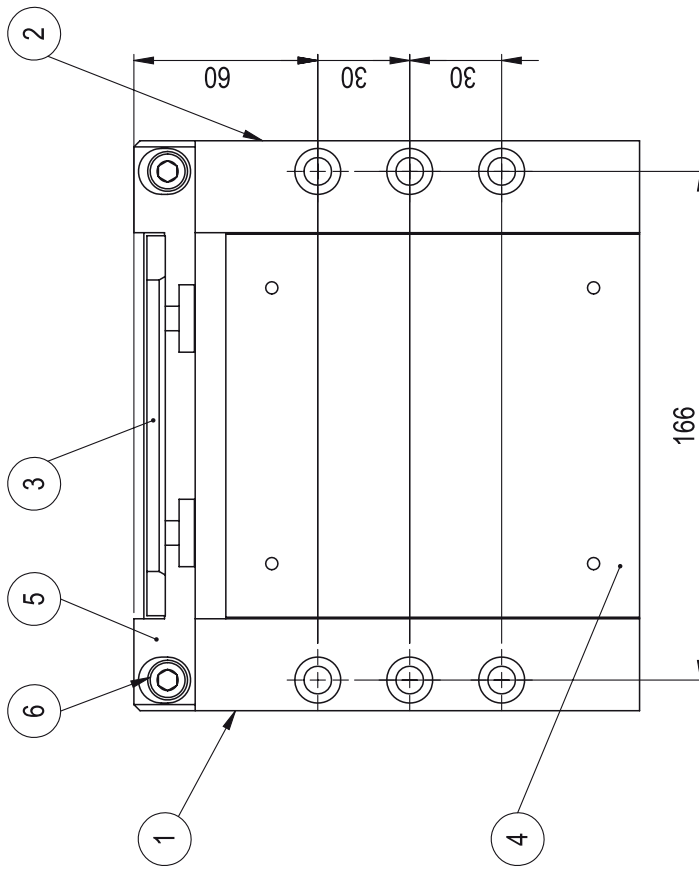
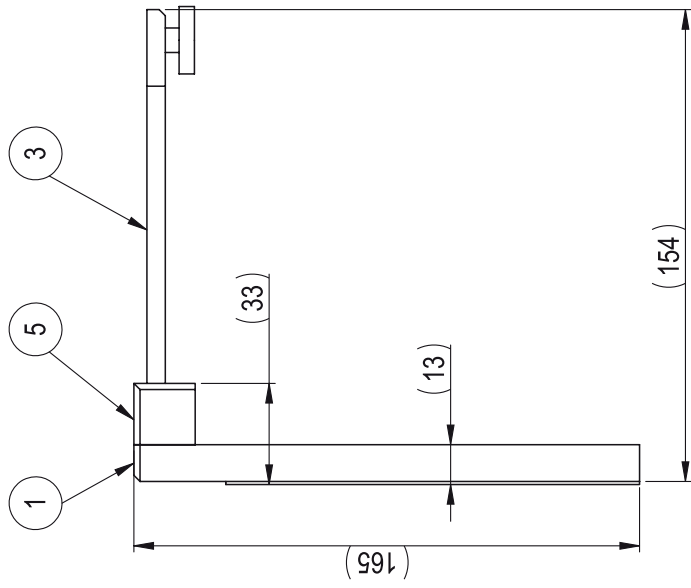


A-A
MAßSTAB 1 : 20



Modell für Planungsmappe
Model for planning file

9.3 Lift adaptation dimensions



1690201035-03

- 1 Left guide
- 2 Right guide
- 3 Base plate

- 4 Mounting plate
- 5 Stop
- 6 Cheese head bolt M 8 x 20 mm (4 x)

Ihr Händler vor Ort: ТОВ "ТСП ТРЕЙДІНГ"
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