

## Operating manual

# ZLV-Passenger lifts



Translation based on the original German version!

Document no. 11000000

**Every operator, before he places the device in service,  
must read the operating manual!**

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## Assignment of these operating instructions

These assembly and operating instructions ...

Document no.:	110000000
Original to:	09/2006
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... applies to:

Type:

54901 - ZLV 8.0 - Indoors  
54907 - ZLV 8.0 - Outdoors  
54902 - ZLV 9.4 - Indoors  
54908 - ZLV 9.4 - Outdoors  
54903 - ZLV 11.0 - Indoors  
54909 - ZLV 11.0 - Outdoors  
54904 - ZLV 12.0 - Indoors  
54910 - ZLV 12.0 - Outdoors  
54905 - ZLV 13.0 - Indoors  
54911 - ZLV 13.0 - Outdoors  
54906 - ZLV 14.0 - Indoors  
54912 - ZLV 14.0 - Outdoors  
  
54971 - ZLV-C 8.0 - Indoors  
54972 - ZLV-C 9.4 - Indoors  
54973 - ZLV-C 11.0 - Indoors  
  
54976 - ZLV-SK 6.5 - Indoors  
54977 - ZLV-SK 8.0 - Indoors  
54978 - ZLV-SK 9.4 - Indoors

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### 1 Introduction

The “Guidelines 2006/42/EG” and the EN280-2001 provide the basis for the set-up and handling of this working platform. Since the constructive design of the working platform is executed on the basis of EN280, reference is additionally made in the following Operating Instructions to the corresponding passages.

## 2 Description

The ZLV - Passenger Lift with electro-hydraulic drive is a mobile, hand-controlled working platform that is permitted to be utilized in buildings, in open spaces and exclusively on level surfaces. The max. resulting noise pressure level of the working platforms is < 70 dB(A). For the individual models, the following maximum loads apply:

Lift Model	Approve load capacity [kg]	= 1 Person [kg]	+ Payload [kg]	max. permissible side force [kg]
ZLV 8.0	140	á 80	60	20
ZLV 9.4	140	á 80	60	20
ZLV 11.0	140	á 80	60	20
ZLV 12.0	135	á 80	55	20
ZLV 13.0	135	á 80	55	20
ZLV 14.0	115	á 80	35	20
ZLV-C 8.0	160	á 80	80	20
ZLV-C 9.4	160	á 80	80	20
ZLV-C 11.0	150	á 80	70	20
ZLV-SK 6.5	135	á 80	55	20
ZLV-SK 8.0	135	á 80	55	20

With additional ballast weights, the support mass was kept as low as possible in order to also ensure the ability to work within restricted space. Removal or displacement of the ballast weights is strictly forbidden! Alterations may only be conducted by a person authorized by the manufacturer.

Depending on the extension, the working platforms are also approved for external use.

However, use in wind strengths greater than 6 according to the Beaufort Scale is not permissible.

### 3 Transport

The ZLV - Passenger Lift can be transported in vehicles or on trailers, in both a lying or standing position. When transporting in a lying position, the Rail Guard (Photo 1) must always be fully secured into position. Otherwise the rails fall apart from one another; additionally, the Tank Ventilation Valve (Photo 2) must always be closed to prevent the hydraulic oil from seeping out.



Photo 1



Photo 2

Lift Model ZLV 14.0 must always be handled by 2 persons.

The ZLV working platforms are unloaded with the assistance of the standard equipment telescopic tilting device from the vehicle or trailer (also applies for loading), (Photo 3 & 4);

We recommend also using a loading ramp for the models, ZLV 13.0 / ZLV 14.0.



Photo 3



Photo 4

This is followed by transport to the worksite. The transport support is used for passing through doors (Standard = 2 m) for the ZLV 13.0 and ZLV 14.0 models (Photo 5). For ZLV 13.0 and ZLV 14.0 models, we recommend at least two persons for tipping onto the transport support.

When the device is put in place, the foot brakes on both mobile wheels must be activated (Photo 6) in order to prevent unintentional rolling of the device. This applies in particular for positioning on areas with slopes.



Photo 5



Photo 6

### 3.1 Forklift transport

All ZLV / ZLV-SK - models are compatible for transport with a forklift as a standard equipment feature. The following must be observed in this regard:

- The lift prongs may only have a maximum width of 140 mm, minimum width of 80 mm, and a maximum height of 60 mm.
- The prongs must be set so that the chassis frame is taken up over the forklift bags (Adjust the external width to the chassis frame).
- Loading of the working platform must be done slowly; carefully insert the prongs from the motor side into the chassis frame up to the mechanical limit stop (Photo 7).
- Secure the working platform with security straps prior to lifting and driving (Photo 8)!

**!** **ATTENTION!**

The variations of the forklift extend significantly!



Photo 7



Photo 8

#### 4 Stabile set up

- 1) This working platform is to be set up in accordance with the Operating Instructions in such way that there are no squeezing or pinching points between the lift platform and parts of the surrounding area, and such that with proper operation the activities to be conducted on the loading facilities or in the event of a load can be carried out without impairment.
- 2) The permissible ground load is to be observed in the proper set up and start-up of this working platform.



#### **WARNING!**

**The permissible ground load may not be exceeded.**

- 3) Working platforms set up or extending into the traffic space of vehicles are to be safeguarded against the traffic hazards in an appropriate manner.

The extension arms must be attached at the worksite. For this, the following is possible:

- a) Standard Arrangement: Use only with uniform extension arm length (Photo 9).



Photo 9

#### **Permissible for external and internal use!**

For internal and external use, there are fundamentally varying extension arm lengths for each respective working platform. If operation of the working platform for internal and external use (with wind load) is permissible, the Operator must first ascertain what extension arm length is needed for the assignment type (**ABSOLUTELY REQUIRED!**). This can be gathered from the following chart or the Inspection Book which is to accompany the device at all times. "Mixing" the extension arms is impermissible for such assignment types!

<b>Lift Model</b>	<b>Extension Arm Length INTERNAL [mm]</b>	<b>Extension Arm Length EXTERNAL [mm]</b>
ZLV 8.0	635	1300
ZLV 9.4	715	1550
ZLV 11.0	850	1880
ZLV 13.0	1140	2150
ZLV 14.0	1210	2305
ZLV-SK 6.5	1050	-
ZLV-SK 8.0	1300	-
ZLV-SK 9.4	1550	-
ZLV-C 8.0	-	-
ZLV-C 9.4	-	-
ZLV-C 11.0	-	-

## ZLV-Passenger lifts

### Stabile set up

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- b) For wall work: Utilization with varying extension arm length (Photo 10).

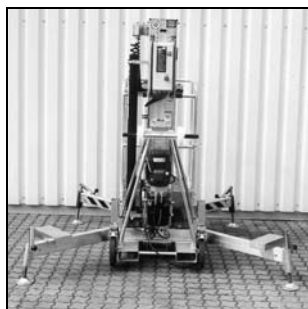


Photo 10

#### **Only permissible for external use!**

Only the assignment type depicted is permissible for use with varying extension arm lengths (two “long” extension arms with additional counterweights on the aggregate side and two “short” extension arms on the cage side)!

The wall height must exceed the platform working height!  
In this extension arm setting, one counterweight must be attached to each of the two rear extension arms with precisely defined space intervals (see chart), since the standing stability is not otherwise guaranteed.

Lift Model	Extension Arm Length Aggregate side [mm]	Extension Arm Length Cage side [mm]	Conterweight per extension arm [kg]
ZLV 8.0	1300	635	45
ZLV 9.4	1550	715	60
ZLV 11.0	1880	850	80
ZLV 12.0	2115	1050	85
ZLV 13.0	2150	1140	80
ZLV 14.0	2305	1210	90

## 4.1 Extension arm use

Slide and secure the 4 extension arms into the corresponding fittings; lock the bolts into place (Photo 11). In the EU-1 design (without special options such as e.g. Passenger/Load Switching), the 4 illuminated displays in the switch box lid indicate when all extension arms are retracted. Operation is however only permissible when the extension arm is vertical and has been correctly fixed into place through the spindling support plate, applying a water level to the rear rail of the working platform (Photo 12). It is recommended that this work step should be carried out by 2 people. Ensure that the undercarriage of the working platform is raised approximately 2 cm from the ground with all wheels/guide rollers.

The working platform is vertical when both air bubbles are between the markings provided on the water level attached to the rear of the lifting apparatus (mast).

## 4.2 Halfen anchoring systems

In ZLV 13.0 u. ZLV 14.0, connect the braces with the extension arms (Photo13).

In this assembly, the 4 extension arms must first be anchored into the corresponding fittings. (Lock the bolts into place). Afterwards pull the braces apart and bolt together with the extension arms. This is done with slight correction of the individual extension arm settings. Then secure with the middle bolt. All bolts must additionally be secured with the spring pin provided.



**WARNING!**

**For external use, all 4 extension arms must be braced.**



**WARNING!**

**For internal use, at least the two extension arms on the aggregate side must be braced.**



Photo 11



Photo 12



Photo 13

### 5 Start up



#### **ATTENTION!**

**Before start-up, unbolt the carriage \* and open the Tank Ventilation Valve!**

The Rail Guard is pulled out, turned toward the rear and sunk into the last rail. The Tank Ventilation Valve must be opened during operation; otherwise the hydraulic system will be damaged (pump, seals). Ensure that the working platform receives sufficient electricity.

**Attention!** Excessively long electrical lines or too many consumers can lead to disruptions and/or to defects in working platform. After connection to the electricity supply, set the key switch on the Switch Box Function. Make the electrical connection with the supply network using a residual current circuit breaker or small size current distributor.

## 6 Handling

Utilize the ZLV - Passenger Lift only on even surfaces with a firm underground, and never overload. Never push the device when it is extended. Elevating of the passenger & payload takes place via an electro-hydraulic drive. Important! Before work starts with the ZLV - Passenger Lift, the Operator must become acquainted with the device and be precisely briefed.

With the working platforms ZLV 12.0, the option of cave height adjustment is available. The lift cage can manually be brought into two prescribed positions with these working platforms. To do this, the fastening bolt secured with a spring pin must be detached. After this, the position of the cage can be altered. The fastening bolt must be reinserted in the new position and secured with the spring pin. Only after proper securing can the working platform be extended, since the insertion of the fastening bolt is monitored by the Limit Switch. In the "High Position", the lift cage is only permitted to be entered by the extractable ladder in the chassis frame (Photo 14 to 16). The Operator must ensure that all folding elements of the ladder are securely clicked into place during "High Position" operation.



Photo 14

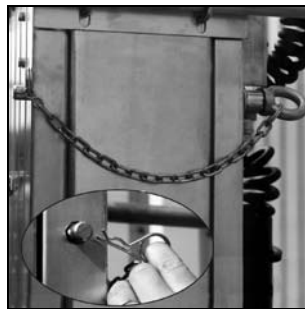


Photo 15

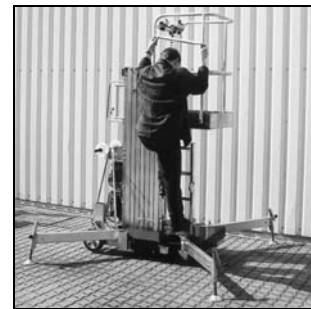


Photo 16

### 7 Operating the lift

The illuminated displays in the switch box indicate when all 4 extension arms are retracted. (Display by means of 4 control lamps: Control lamps go out when the extension arms are retracted; Photo 19). (Display by means of a single control lamp: Control lamp lights up when the extension arms are retracted; Photo 17c). After alignment and fixing by means of the spindling support plate, the working platform is ready to operate (also see point 4).



Photo 17 a

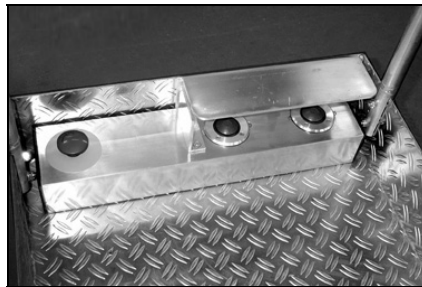


Photo 17 b



Photo 17 c

Unlock the EMERGENCY SHUT-OFF switching button in the lift cage and turn the key switch in the switch box to function 1 or 2 and remove the key (Photo 18a, b and 19).

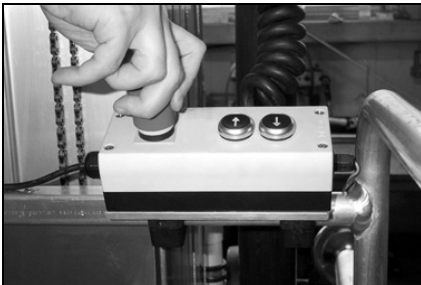


Photo 18 a



Photo 18 b

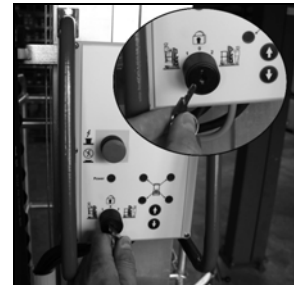


Photo 19

### 7.1 Two-handed operation

Guided motion during operation only takes place with simultaneous activation of both Hand Switches with both hands. This prevents unintentional activation and contact with possible squeezing and pinching points. The working platform can be moved upwards or downwards using the push-buttons designated with arrows (Photo 20 a / b).



Photo 20 a

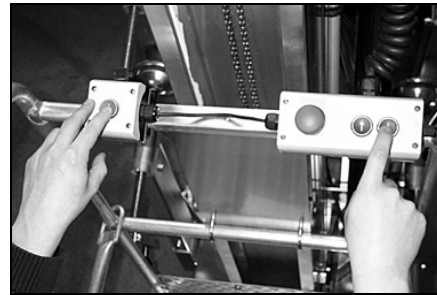


Photo 20 b

### 7.2 Foot operation

The control panel in the cage is on the side facing the mast system. This prevents contact with the mechanics. Additionally, the draw-in point for the chain has been safeguarded with an intrusion protection fixture. In spite of the difficulty in accessibility to the unprotected areas at the rear and side, the warnings on the rain covering and on the mast system absolutely must be observed (Photo 21a and 21b).

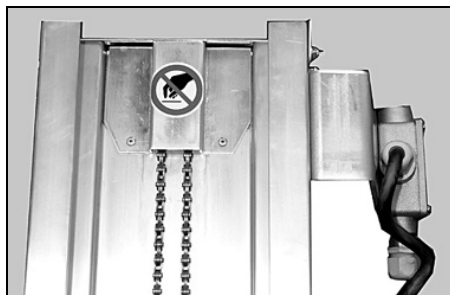


Photo 21 a



Photo 21 b

The working platform can be moved upwards or downwards using the logically (Upwards = Right; Down = Left) arranged Foot Switches (Photo 22a and 22b).



Photo 22 a



Photo 22 b

#### 7.3 Operation from the switch box

In the event of an additional steering mechanism in the Switch Box, operation at the Switch Box by means of the lockable switch can be selected. For this it must be ensured that switching can only be conducted under control of the operator. For this, the key for the switch must be removed prior to operation after the desired operating position has been selected (also see Point 18).



#### **WARNING!**

**Operation must be stopped in wind strengths exceeding 6 according to the Beaufort Scale!**

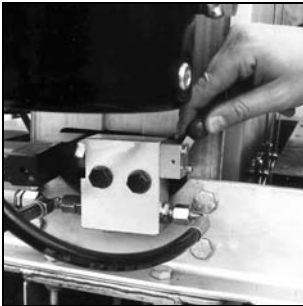
The preset platform lowering speed can be obtained from the Inspection Book! It may not be manipulated in any way.

## **8 Unauthorized use**

Upon leaving the working platform, the EMERGENCY SHUT-OFF switch in the Switch Box must be activated and the key removed in order to safeguard the working platform against unauthorized use.

## **9 Emergency lowering**

Should the Operator be unable to actively control the operation of the working platform (e.g., unconsciousness or breakdown of the electrical or hydraulic systems), the Operator can be lowered by means of the EMERGENCY LOWERING VALVE on the hydraulic cylinder (Photo 23).



***EMERGENCY LOWERING VALVE next to the tank!***

Photo 23

## **10 Additional lowering**

All EU standard devices have an additional lowering possibility in the event of disruption of the electrical supply. The working platform can be lowered by the Operator in the cage via an automatically charging battery (in the Switch Box).

## **11 Working on electrical facilities**

The ZLV / ZLV-C / ZLV-SK - Passenger Lifts are not suitable for work on electrically conductive parts. (Unprotected electrical facilities). Take great care with wires, overhead lines, and floor extensions. Maintain a minimum distance of 5 meters with overhead lines.

## 12 Lift models

The following electrical drive types are available:

Model	Drive / Motor	Control	Feed cable	Protection Type
EU1	One-Phase-Alternating current electronic motor 230V/50Hz 1.5KW	12V/13V DC	Cabel 3x1,5	IP 55
EU2	Three-Phase-Rotary current electronic motor 400V/50Hz 1.5 KW	12V/13V DC		IP 55
EU3	Direct current electronic motor 24 V 2.5KW	24V DC		IP 42
EU4	Pneumatic Motor 63 l/sec. 2.5KW at 6.3 bar	pneumatic		
EU6	Direct current electronic motor 12V 2KW	12 V DC		IP 42

**IMPORTANT!** In the case of lifts with direct current drive and battery cases:

- Models EU-3/EU-6 are always equipped with a battery case.
- The position of the batteries is specified by the manufacturer and may not be altered under any circumstances whatsoever, since otherwise the standing stability is no longer guaranteed.
- With these models, the working platforms may not be tilted.
- With models EU-3 and EU-6 with battery case, it must be observed prior to operation that the battery case is lying on its original position (held in place by a fixing bracket on the chassis frame), since otherwise the standing stability is no longer guaranteed.
- **Minimum Extension Arm Length: 765 mm**
- A charging device is included in delivery with all models.
- When the working platform with direct current drive is not in operation, the EMERGENCY SHUT-OFF switch in the Switch Box must be activated and the key must be removed; otherwise the battery loses its charge.
- Before removing the battery, it must be observed that the “ – Pole” is disconnected first!
- In order to prevent flashovers to battery poles, the plastic covering over the batteries may not be removed for any reason (except for charging, photo 25).
- Charging the battery is only permissible in closed and well-ventilated spaces! The Charging Device Operating Instructions from the manufacturer included with the main device are to be observed without exception!

#### 12.1 Battery/Batteries in the case

Before the battery case is opened, the plug connection must be disconnected. Then connect the charging device to the battery/batteries using the plug. The charging procedure must always take place with the battery case lid and plastic covering removed, since otherwise the escaping gas can lead to an explosion. (Photo 24 & 25). Open the caps of the battery in the charging procedure (not applicable with maintenance-free batteries). The battery case is to be removed from the chassis frame for tilted transport.



Photo 24



Photo 25

Before you start to load the battery you must take off the plastic cap.

#### 12.2 Batteries in the chassis frame

Disconnect the plug connection and plug in the charging device. Tilting of the working platform is not permissible!

Batteries may never be allowed to completely lose their charge, since consequently:

- a) The life of the battery is dramatically shortened.
- b) The battery will no longer be accepted by the charging device.

## **13 Supervision of the safety facilities / Regulations requiring compliance**

- Prior to start-up of the lift, all important workday inspections regarding the safe condition of the device must be conducted:
  - Loss of oil?
  - Loss of electrical fastenings/connections?
  - Worn hoses/cables?
  - Condition of the batteries (only with EU-3 and EU-6)
  - Condition of the battery for the additional electrical lowering?
  - Accident damages?
  - Illegible instructional signs?
  - Special safety precautions?
- Prior to start-up of the lift, attach all extension arms and level out ground unevenness with the spindles as needed (set up vertically) (see Photo 04).
- Only set up the device on surfaces of sufficient firmness, since otherwise the standing stability is no longer guaranteed.
- It is strictly forbidden to use the device as a crane!
- Never overload the ZLV / ZLV-C / ZLV-SK - Passenger Lift.
- Do not stand underneath the load.
- Operation must be stopped in wind strengths exceeding 6 according to the Beaufort Scale.
- It is strictly forbidden to use ladders or other objects on or on top of the lift that serve to increase the range or the working height!
- Do not climb, sit or stand on the railing of the lift cage.
- The working platform (lift cage) may only be entered or left in its basic position (i.e., lift fully retracted).
- Do not move the lift in the extended state.
- Also refrain from ever placing the lift at tilted levels in the transport position (danger of rolling away).
- Before the lift is tilted, secure the mast with the Rail Guard (ZLV / ZLV-SK) and close the Tank Ventilation Valve.
- Take great care with wires, floor extensions and overhead lines (safe distance – at least 5 meters).
- The lift is not suitable for work on electrically charged parts.
- It is strictly forbidden to attach parts of any kind that increase the wind strength on the mobile working platform (e.g., writing boards)!

## ZLV-Passenger lifts

### Supervision of the safety facilities / Regulations requiring compliance

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- Prevent collisions with fixed (structures, etc.) or mobile (vehicles, cranes, etc.) objects at all costs!



#### **WARNING!**

**It is strictly forbidden to conduct alterations on the device which could influence the safety or which violate official safety regulations.**

**Even minor alterations that become necessary due to special working methods or conditions require the consent of the manufacturer.**

## **14 Maintenance and inspection**

- Before use examine the safety features for their functionality, particularly the chains for wear or damage!
- Keep the chains and guide rollers well lubricated!
- The chain pairs must always be under the same amount of tension. This can be seen in the chain suspension below in the rail section; the chain suspension must always stand straight; if necessary, the chains must be retightened and fixed!
- Ensure that the external cables are under light tension!
- Protect the lift from rain and other weather influences!
- Ensure that no water reaches the electrical controls or connections!
- Change the oil during annual inspection.
- Use a low viscosity oil for work in low temperatures.
- After approximately 20 operational hours, inspect all hydraulic connections for their leak tightness and tighten if necessary.
- With direct current drive, the battery poles must always be lightly lubricated (pole lubricant).
- Open the battery caps during the charging procedure (not applicable with maintenance-free batteries).
- Inspect the device for potentially hazardous alterations (corrosion, crack formation, wear, etc.).
- Observe the Annual Inspection of the lift by an authorized specialist. Wearable and safety parts are to be changed as needed.
- Only original parts may be used.

### **14.1 Excerpt from the TRADE ASSOCIATION Policy BGG 945 Point 5.4**

- 5.4 Regular Inspections in Accordance with Section 2.9.1 of Chapter 2.10 of the TRADE ASSOCIATION Regulation, "Operation of Work Equipment".
- 5.4.1 Following initial start-up, lift working platforms are to be inspected at intervals of no longer than one year by an Authorized Specialist. During operation, deviations in the safety level present at the initial start-up are possible. The Operator must undertake the required measures to ensure that this safety level remains. Deviations can be caused by wear, corrosion, violent effects, changing the surroundings, changing the mode of utilization. Also see Guideline 89/655/EWG of the Council of October 30th, 1989 governing Minimum Provisions for Safety & Health Protection in the Utilization of Work Equipment by Employees When Working (implemented in national law by the Operational Safety Ordinance –

## ZLV-Passenger lifts

### Maintenance and inspection

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BetrSichV). In the recurrent inspection, defects discovered are to be eliminated in accordance with their safety -technical significance within a reasonable time period.

- Inspection following significant alterations or significant repairs on FHAB'n in the operation

#### **14.2 Excerpt from the TRADE ASSOCIATION Policy BGG 945**

##### **Point 5.3**

- 5.3 Extraordinary Inspections in Accordance with Section 2.9.2 of the Chapter 2.10 of the TRADE ASSOCIATION Regulation "Operation of Work Equipment" (BGR 500)

Lift working platforms with more than 2m of hub height and lift working platforms designed for passengers to ride on the load lifting equipment or who are located under the load lifting equipment or the load itself are to be inspected by an Authorized Specialist following alterations in the construction and following significant repairs to load-bearing parts prior to restart-up. (Additional explanations on BGG 945 PT. 5.3 see the TRADE ASSOCIATION Policy BG 945).

- Only original parts may be installed.

## 15 Conduct in the Event of Disruption

### Defect Search in Case of Disruption:

- Electrical network fuse OK?
- Spiral cable defective?
- Extension Arm Monitor Switch OK?
- Rail Guard loose?
- Tank Ventilation Valve open?
- Control fuse in the Switch Box OK? (only with 13 volt control voltage)
- Chains equally tense?



### **WARNING!**

**Work on the electrical and hydraulic systems may only be carried out by authorized trained specialist personnel.**

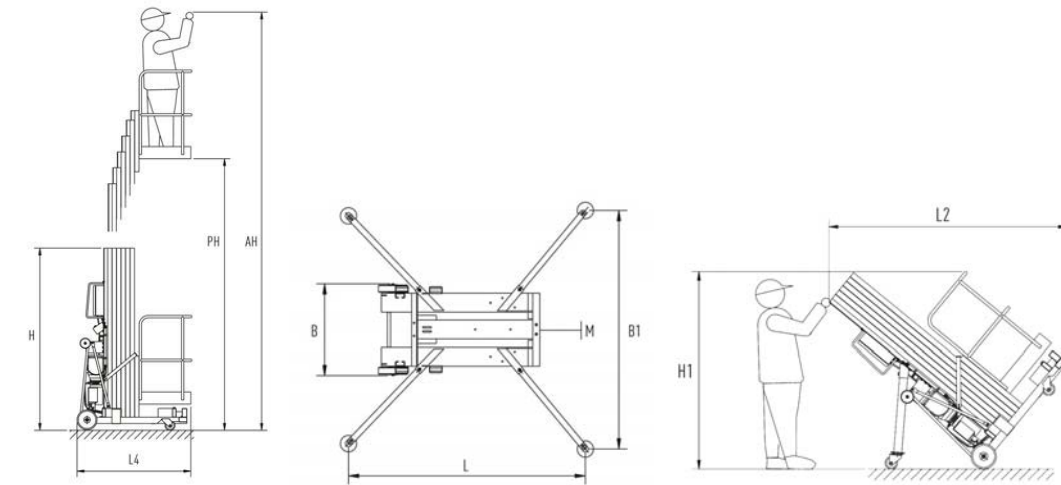
- a) See Inspection Book for hydraulic/electrical circuit diagrams with the corresponding Replacement Parts Bill of Materials
- b) Prior to conducting work to active parts, electrical systems and operational equipment must be put into and maintained in a voltage-free state for the duration of the work. This must be done under observance of the following safety regulations:
  - Disconnect
  - Secure against reactivation
  - Establish voltage-free state

## **16 Replacement Parts**

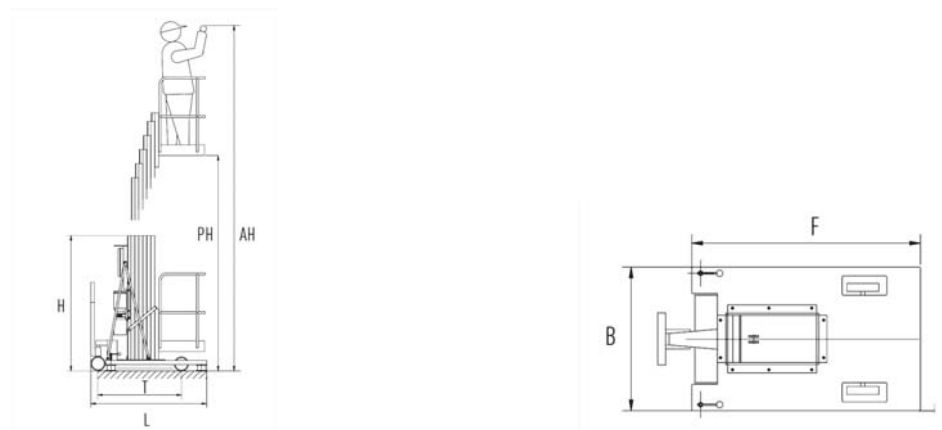
Only original replacement parts may be used, since otherwise no guarantee rights exist and the safety of the lift is no longer guaranteed. Alterations and conversions not conducted by us release us from all liability in the event of damages. Please contact us in the event of necessary repairs or replacement part orders.

## 17 Technical Data

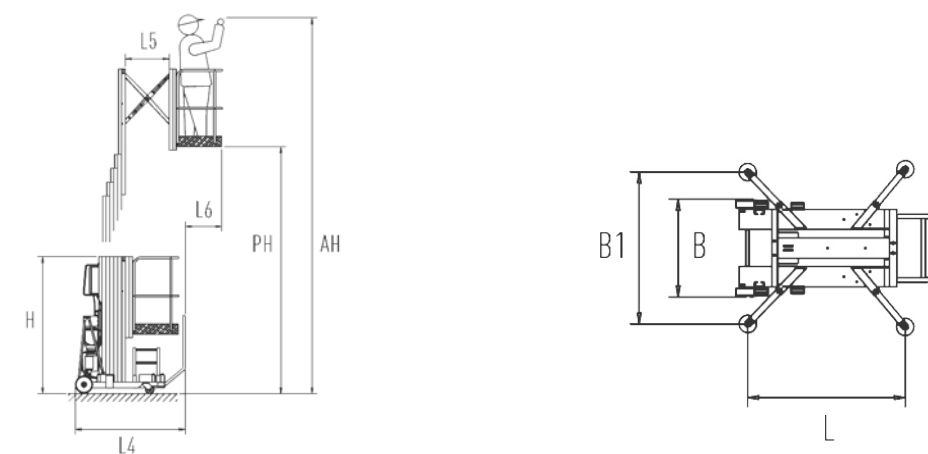
### ZLV



### ZLV-C



### ZLV-SK



# ZLV-Passenger lifts

## ZLV

		<b>ZLV 8.0</b>	<b>ZLV 9.4</b>	<b>ZLV 11.0</b>	<b>ZLV 12.0</b>	<b>ZLV 13.0</b>	<b>ZLV 14.0</b>
Working Hieght( AH) max.	m	8,00	9,45	10,85	12,00	12,75	14,00
Platform Hieght (PH) max	m	6,00	7,45	8,85	10,00	10,75	12,00
Playlod	kg	140,0	140,0	140,0	135,0	135,0	115,0
Basket dimensions L x B x H	m	0,66x0,66x1,10	0,66x0,66x1,10	0,66x0,66x1,10	0,66x0,66x1,10	0,66x0,66x1,10	0,66x0,66x1,10
Height (H) Retracted	m	1,98	1,98	1,98	1,98	2,30	2,77
Chassis width (B)	m	0,77	0,77	0,77	0,77	0,77	0,77
Chassis length (L4)	m	1,32	1,38	1,44	1,44	1,44	1,44
Length tilted (L2)	m	--	--	--	--	2,40	2,85
Tilted height	m	--	--	--	--	1,98	1,95
Basic dimensions – Indoors Lx B1	m	1,39 x 1,41	1,50 x 1,53	1,78 x 1,74	2,05 x 2,04	2,17 x 2,18	2,25 x 2,29
Basic dimensions – Outdoors Lx B1	m	2,28 x 2,43	2,55 x 2,73	3,10 x 3,24	3,47 x 3,67	3,47 x 3,67	3,67 x 3,90
Wall distance (M)	cm	10,0	9,0	21,0	34,0	40,0	45,0
Telescoping ca.	sec.	26,0	21,0	26,0	26,0	35,0	40,0
Weight – Indoor	kg	320,0	350,0	380,0	405,0	445,0	480,0
Weight – Outdoors	kg	340,0	375,0	410,0	440,0	475,0	515,0
Order no. Indoor		54901	54902	54903	54904	54905	54906
Order no. Outdoors		54907	54908	54909	54910	54911	54912

		<b>ZLV- C 8.0</b>	<b>ZLV-C 9.4</b>	<b>ZLV-C 11.0</b>
Working Hieght (AH) ca.	m	8	7,65	8,9
Platform Hieght (PH) ca.	m	6	5,65	6,9
Playlod	kg	160	160	150
Basket dimensions L x B x H	m	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10
Height (H)	m	1,98	1,98	1,98
Width (B)	m	0,79	0,79	0,89
Length (L)	m	1,61	1,61	1,67
Basic dimensions F x B	ca.m	1,37 x 0,79	1,37 x 0,79	1,37 x 0,79
Wheelbase (T)	m	1,18	1,18	1,18
Ground clearnce	mm	105-125	105-125	105-125
Telescoping	sec.	26	21	26
Weight	kg	678	715	825
Order no.		54971	54972	54973

		<b>ZLV-SK 6.5</b>	<b>ZLV-SK 8.0</b>	<b>ZLV-SK 9.4</b>
Working Hieght (AH) ca.	m	6,38	7,65	8,9
Platform Hieght (PH) ca.	m	4,38	5,65	6,9
Playlod	kg	135	135	135
Basket dimensions L x B x H	m	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10
Height (H)		1,98	1,98	1,98
Width (B)		0,77	0,77	0,77
Length (L4)		1,6	1,6	1,6
Basic dimensions–Indoors L x B1		2,07 x 2,18	2,29 x 2,43	2,55 x 2,74
Working outreach (L5)	cm	62	62	62
Spacer bar-rim (L6)	cm	42	48	53
Telescoping	sec.	32	30	25
Weight	kg	388	438	457
Order no.		54976	54977	54978

## 18 Special equipment and accessories

### 18.1 Additional operation from below

For this it must be ensured that the switching can only be conducted under control of the Operator. Additionally, the key for the switch must be removed prior to operation after the desired operating position has been selected.

### 18.2 Passenger / Load switching (Photo 26)



Photo 26

#### **This utilization is only permissible in interior spaces!**

Here it must be ensured that the fastening bolt is inserted into the corresponding opening and is secured with the spring pin. Additionally, the load must be placed on the load fork in a slip-proof manner or it must be secured.

#### **Also see under Point 06. Handling**

The type of operation can be selected with the Key Switch on the Switch Box. Use the key of the EMERGENCY SHUT-OFF Key Switch.

## 19 Safety regulations

In operation of the ZLV / ZLV-C / ZLV-SK -Passenger Lifts, Accident Prevention Regulations are to be observed (UVV BGG 945-1Lift Working Platforms). The Safety Regulations of EN280 also apply. You can find an excerpt from these regulations in the Appendix.

### 01. Introduction ZLV-C

This extension of the operating instructions for ZLV-C passenger lifts is valid for the following types of lifting work platforms:

**ZLV-C 8.0 (54971) -EU1**

**ZLV-C 9.4 (54972) -EU1**

**ZLV-C 11.0 (54973) -EU1**

The listed types of lifts mainly correspond with the lifting work platforms of type ZLV. It is therefore necessary to observe the "Standard operating instructions", most details of which maintain their validity, in addition to the following points.

### 02. Description ZLV-C

The peculiarity of aerial work platforms ZLV-C is a compact base with integrated hand lift truck. A simple move and the use of limited space are guaranteed. There are no additional extension arms. The outer dimensions, combined with the weight equipment, guarantee the stability.

**This utilization is only permissible in interior spaces!**

For the individual models, the following maximum loads apply:

Lifftyp	Approved load capacity [kg]	=1 Person [kg]	+Payload [kg]	Max. permissible side force [kg]	Weight [kg]
ZLV-C 8.0-EU1	160	á 80	80	20	678
ZLV-C 9.4-EU1	160	á 80	80	20	715
ZLV-C 11.0-EU1	150	á 80	70	20	825

### **03. Transport ZLV-C**

See also "Standard Operating Instructions" Pt. 03.

Lift Model ZLV-C can only be transported in a standing position.

The move is via the integrated hand lift truck. A loading, for example on a trailer or truck can also be done via a forklift. The possibility of the device is given by lash lifting. The use of the lifting is recommended for any transport and is required in particular for transport with a forklift.

The ZLV-C should be slowly moved through doors. You must turn the height of the lift truck to be taken into account. During transport over a ramp (with slope surfaces), the person must always stand on the mountain side. If the unit is turned off, it must be ensured that all four feet are on the floor. The truck must both be completely drained.

### **04. Installation of the ZLV-C in a Firm Standing Position**

For use the built truck must be weaned and made sure that all four feet are on the floor. **WARNING!** During weaning, care must be taken to ensure that the people involved keep a safe distance from the unit and in particular the support legs, so that a squeezing of the limb is avoided. The operation is allowed but only when the rear support legs at the hands of spindles, with the addition of the water level on the rear rail of the platform, were set vertically and accurate (see also Figure 12 Standard Operating Manual).

The work platform is vertically, if ther water balance, which is attached to the back of the lifting equipment (mast), nos both air bubbles between the marks available.

By permanently attached ballast weights the stabilisers were kept as low as possible to ensure a work even in confined spaces. Removing or moving the ballast is strictly prohibited! A change may be carried out only by persons authorized by the manufacturer.

*[siehe EN280, Pkt. 7.1.1.7]*

### **05. Commissioning ZLV-C**

See "Standard Operating Instructions" Pt. 05.

### **06. Handling ZLV-C**

See "Standard Operating Instructions" Pt. 06.

#### 07. Operating the Lift ZLV-C

See "Standard Operating Instructions" Pt. 07.

A hydraulic valve is blocked during the entire trip up and down the truck so that it can not be raised. If the built trucks are not drained, it sinks slowly on actuation of the control. **WARNING!** Before the operator continues the journey, he must now go down again until the lift and position described as at point 04. Only when this is done, the upward movement may continue.

#### 08. Unauthorised Use ZLV-C

See "Standard Operating Instructions" Pt. 08.

#### 09. Emergency Lowering ZLV-C

See "Standard Operating Instructions" Pt. 09.

#### 10. Additional Lowering Function ZLV-C

See also "Standard Operating Instructions" Pt. 10.

#### 11. Working on Electrical Facilities ZLV-C

See "Standard Operating Instructions" Pt. 11.

#### 12. Lift Models ZLV-C

The lifting work cages of type ZLV-SK are only provided with the following electrical drive model:

Model	Drive/Motor	Control system	Feed cable	Protection Type
EU1	One-Phase-Alternating current electronic motor 230V/50Hz 1.5KW	12V/13V DC	Cable 3x1.5	IP 55

#### 13. Supervision of the Safety Facilities / Regulations Requiring Compliance – ZLV-C

See "Standard Operating Instructions" Pt. 13.

- The use of the lifting is recommended for any transport and is required in particular for transport with a forklift.
- The ZLV-C should be slowly moved through doors. You must turn the height of the lift truck to be taken into account.
- During transport over a ramp (with slope surfaces), the person must always stand on the mountain side.

- **WARNING!** During weaning, care must be taken to ensure that the people involved keep a safe distance from the unit and in particular the support legs, so that a squeezing of the limb is avoided.
- If the unit is turned off, it must be ensured that all four feet are on the floor.
- Before using the pallet must be drained and made sure that all four feet are on the floor.
- The operation is allowed only when the rear support legs at the hands of spindles, with the addition of the water level on the rear rail of the platform, were set vertically and correct.
- If the ZLV-C in the process get out of control, Device immediately stopping.
- The monitoring of stability via a hydraulic valve. Is not the stroke risk-drained, he descends slowly upon actuation of the control. As long as the platform of the lift cylinder is fully retracted, the lifting force of the built truck suspended. If this is not guaranteed, its function must be restored by a specialist before the operation can be continued.

#### **14. Maintenance and Inspection ZLV-C**

See "Standard Operating Instructions" Pt. 14.

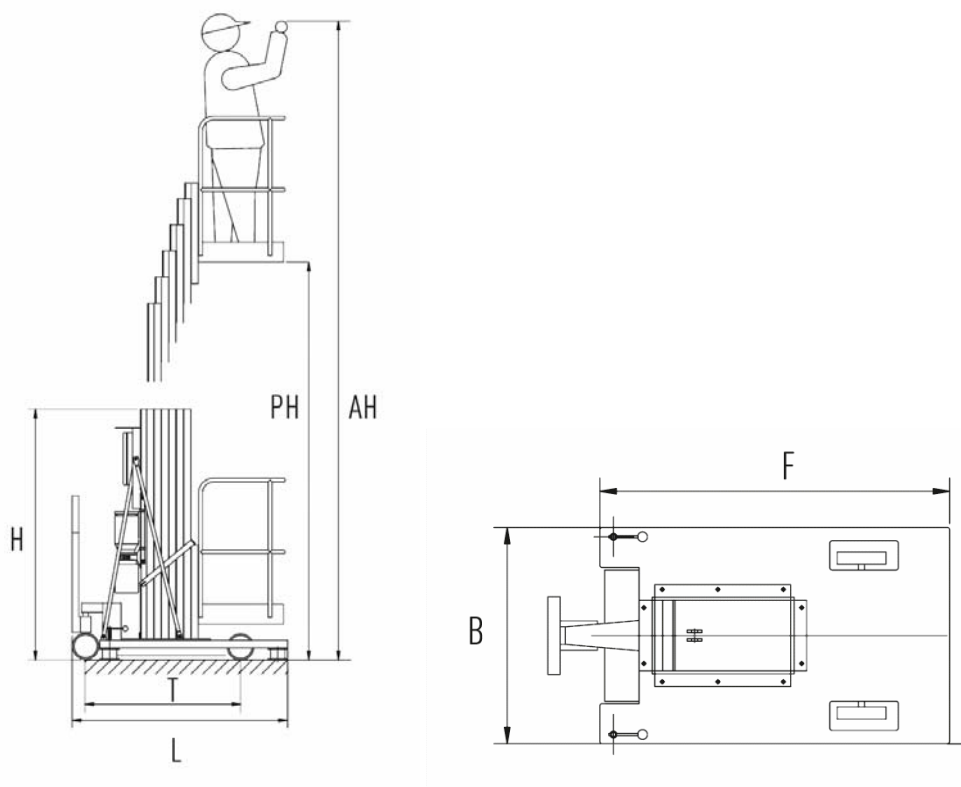
#### **15. Conduct in the Event of a Malfunction ZLV-C**

See "Standard Operating Instructions" Pt. 15.

#### **16. Spare Parts ZLV-C**

See "Standard Operating Instructions" Pt. 16.

### 17. Technical Data ZLV-C



		ZLV- C 8.0	ZLV-C 9.4	ZLV-C 11.0
Working Hieght (AH)	ca. m	8	7,65	8,9
Platform Hieght (PH)	ca. m	6	5,65	6,9
Playlod	kg	160	160	150
Basket dimensions L x B x H	m	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10
Height (H)	m	1,98	1,98	1,98
Width (B)	m	0,79	0,79	0,89
Length (L)	m	1,61	1,61	1,67
Basic dimensions F x B	ca.m	1,37 x 0,79	1,37 x 0,79	1,37 x 0,79
Wheelbase (T)	m	1,18	1,18	1,18
Ground clearnce	mm	105-125	105-125	105-125
Telescoping	sec.	26	21	26
Weight	kg	678	715	825
Order no.		54971	54972	54973

## 01 . Introduction ZLV-SK

This extension of the operating instructions for ZLV-SK passenger lifts is valid for the following types of lifting work platforms:

ZLV-SK 6.5 (54976) -EU1

ZLV-SK 8.0 (54977) -EU1

ZLV-SK 9.4 (54978) -EU1

The listed types of lifts mainly correspond with the lifting work platforms of type ZLV. If is therefore necessary to observe the “Standard operating instructions”, most details of which maintain their validity, in addition to the following points.

## 02. Description ZLV-SK

The special feature of the lifting work platforms of type ZLV-SK is the electrically operated horizontally extendable lift cage. This enables additional ranges of up to 620 mm to be reached. For the individual models, the following maximum loads apply:

Liftyp	Approved load capacity [kg]	=1 Person [kg]	+Payload [kg]	Max. permissible side force [kg]
ZLV-SK 6.5 (54976)-EU1	135	á 80	55	20
ZLV-SK 8.0 (54977)-EU1	135	á 80	55	20
ZLV-SK 9.4 (54978)-EU1	135	á 80	55	20

Similar to the models ZLV-SK, the support mass was kept as low as possible by means of additional ballast weights in order to enable work even in confined spaces. (*Photo 01 SK*) Removal or displacement of the ballast weights is strictly forbidden! Alterations may only be conducted by a person authorized by the manufacturer.

*[siehe EN280, Pkt. 7.1.1.7]*

## 03. Transport ZLV-SK

See also “Standard Operating Instructions” Pt. 03.

Lift Model ZLV-SK can only be transported in a standing position.

## ZLV-Passenger lifts

### Safety regulations

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Lift model ZLV-SK must always be handled by 2 people.

#### 04. Installation of the XK in a Firm Standing Position

See also "Standard Operating Instructions" Pt. 04.

As opposed to the other lifting work platforms, models ZLV-SK are only approved for indoor use.

- a) Layout; use only with uniform jib length

Liftyp	Jib length INTERNAL [mm]
ZLV-SK 6.5 (54976)-EU1	1050
ZLV-SK 8.0 (54977)-EU1	1300
ZLV-SK 9.4 (54978)-EU1	1550

#### 05. Commissioning ZLV-SK

See "Standard Operating Instructions" Pt. 05.

#### 06. Handling ZLV-SK

See "Standard Operating Instructions" Pt. 06.

#### 07. Operating the Lift ZLV-SK

With the lifting work platforms of model ZLV-SK, horizontal movement of the lift cage is also possible as well as normal vertical movement.

The following points must be observed in doing so:

- Vertical movement is only possible when the lift cage is horizontally retracted (position alongside the mast)!
- Horizontal movement is only possible from a platform height of 2 m!

The position of the lift cage is monitored horizontally by means of operating switches and vertically by means of safety switches!

Particularly when vertically lowering, the operator must make sure that no persons are within the range of the lifting work platform who may cause accidents due to negligence and/or carelessness.

### **Vertical Movement**

The lift cage must be horizontally retracted.

The cage tensioners must be closed prior to vertical movement (*Photo 02 SK*).

The selector switch “vertical/horizontal” must be switched to “Vertical” (*Photo 03 SK*).

The illuminated display in the manual control instrument housing on the lift cage indicates when all jibs are retracted. After alignment and fixing by means of the spindling support plate, the working platform is ready to operate (also see Pt. 04).

Pull the EMERGENCY-STOP switching button in the lift cage and unlock the key switch in the switch box. Now “vertical” upward and downward movement can be effected using the two-handed control unit (*Photo 04 SK*).

**[See prEN280, Pt. 5.6.1 to 5.6.6 (5.10 ff.)]**

The preset platform lifting and lowering speed can be obtained from the Inspection Book! It may not be manipulated in any way.

**[See prEN280, Pt. 5.3.6]**

### **Horizontal Movement**

The cage tensioners must be released prior to horizontal extension (*Photo 05 SK*).

The selector switch “vertical/horizontal” must be switched to “Horizontal” (*Photo 06 SK*).

The illuminated display in the manual control instrument housing on the lift cage goes out!

Now the two-handed control unit “Horizontal” can be used to extend and retract.

(*Photo 07 SK*).

## **08. Unauthorised Use ZLV-SK**

See “Standard Operating Instructions” Pt. 08.

## **09. Emergency Lowering ZLV-SK**

In the event of a power failure, the lift is retracted by means of the emergency lowering function at the cylinder.

See “Standard Operating Instructions” Pt. 09.

Horizontally, the lift cage can be mechanically retracted using the lever in the lift cage. (*Photo 08 SK*).

## **10. Additional Lowering Function ZLV-SK**

See also “Standard Operating Instructions” Pt. 10.

Remark:       The additional lowering function only enables vertical lowering!  
                  For this, the lift cage must be horizontally retracted.

## ZLV-Passenger lifts

### Safety regulations

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#### 11. Working on Electrical Facilities ZLV-SK

See "Standard Operating Instructions" Pt. 11.

#### 12. Lift Models ZLV-SK

The lifting work cages of type ZLV-SK are only provided with the following electrical drive model:

Model	Drive/Motor	Control system	Feed cable	Protection Type
EU1	One-Phase-Alternating current electronic motor 230V/50Hz 1.5KW	12V/13V DC	Cable 3x1.5	IP 55

This model includes a 230 V socket in the lift cage!

#### 13. Supervision of the Safety Facilities / Regulations Requiring Compliance – ZLV-SK

See "Standard Operating Instructions" Pt. 13.

#### 14. Maintenance and Inspection ZLV-SK

See "Standard Operating Instructions" Pt. 14.

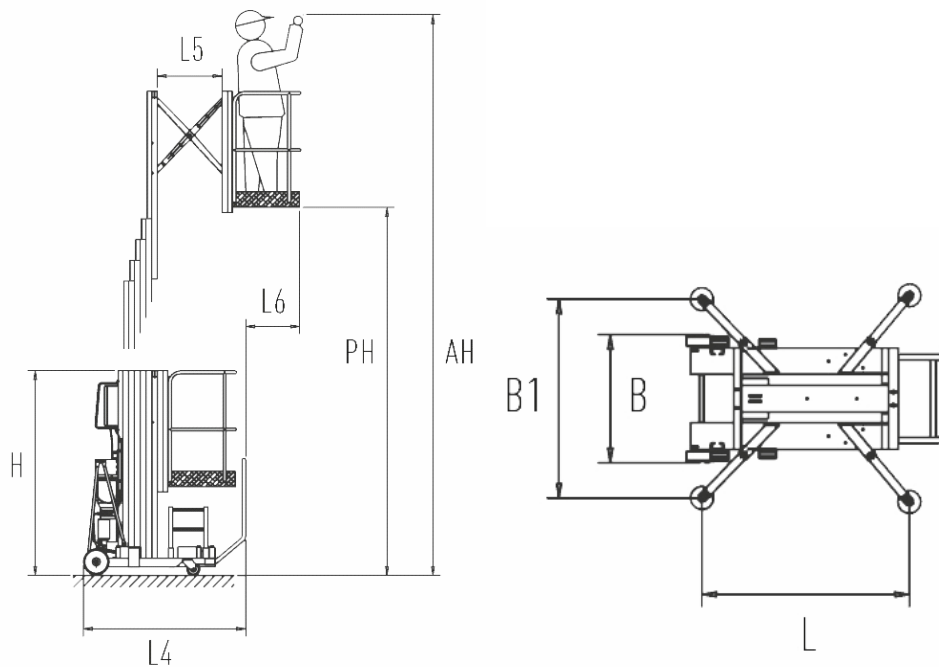
#### 15. Conduct in the Event of a Malfunction ZLV-SK

See "Standard Operating Instructions" Pt. 15.

#### 16. Spare Parts ZLV-SK

See "Standard Operating Instructions" Pt. 16.

**17. Technical Data ZLV-SK**



		<b>ZLV-SK 6.5</b>	<b>ZLV-SK 8.0</b>	<b>ZLV-SK 9.4</b>
Working Hieght (AH)	ca. m	6,38	7,65	8,9
Platform Hieght (PH)	ca. m	4,38	5,65	6,9
Playlod	kg	135	135	135
Basket dimensions L x B x H	m	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10	0,66 x 0,66 x 1,10
Height (H)		1,98	1,98	1,98
Width (B)		0,77	0,77	0,77
Length (L4)		1,6	1,6	1,6
Basic dimensions–Indoors L x B1		2,07 x 2,18	2,29 x 2,43	2,55 x 2,74
Working outreach (L5)	cm	62	62	62
Spacer bar-rim (L6)	cm	42	48	53
Telescoping	sec.	32	30	25
Weight	kg	388	438	457
Order no.		54976	54977	54978

# ZLV-Passenger lifts

## Safety regulations

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See Additional Sheets ZLV-SK

Photo 01SK



Photo 02 SK



Photo 03 SK



Photo 04 SK

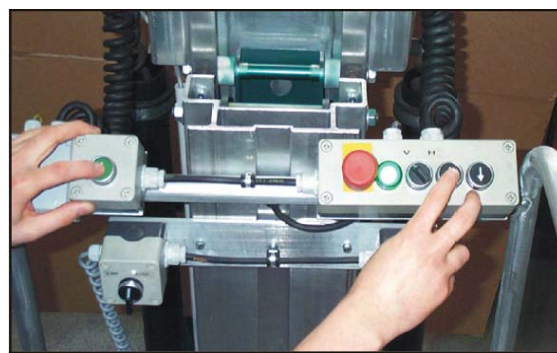


Photo 05 SK



Photo 06 SK

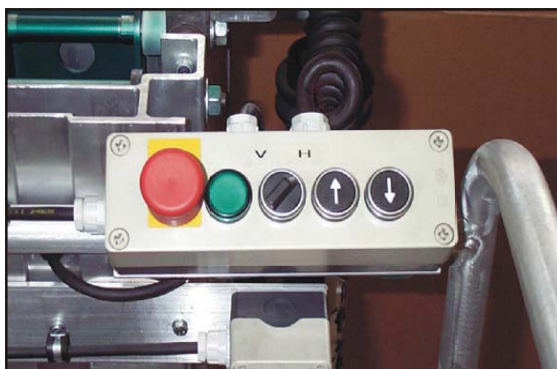


Photo 07 SK

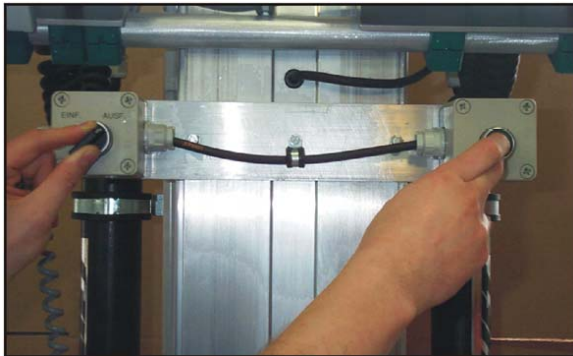


Photo 08 SK



Photo 09 SK



Photo 010 SK



Photo 011 SK



**Space for notes**

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