Assembly and Operating Manual

GEDA® 300 Z

Construction hoist

for material transport

Original Operating Manual

EU Declaration of Conformity

The manufacturer:
GEDA GmbH
Mertinger Strasse 60
86663 Asbach-Bäumenheim
hereby declares that the machine

Designation:	Construction hoist for material transport (for temporary use on construction sites by authorised persons)		
Type:	300 Z	Serial number:	16430 / 000670..., 14770 / 000672...
Year of construction:	Refer to name plate on the machine		

is in compliance with all pertinent provisions of the following directives at the time of being put on the market.

Directives:	Conformity evaluation procedures applied:
2006/42/EC Machinery Directive	Appendix VIII
2014/35/EU Low Voltage Directive	Appendix IV
2014/30/EU EMC Directive	Appendix II
2000/14/EC Noise Emissions Directive	Appendix V

Applied (harmonised) standards:
EN ISO 12100:2010, EN60204-1/32:2008, EN12158:2001

Measured sound power level	(L_{WA})	75 dB (A)
Guaranteed sound power level:	(L_{WA})	78 dB (A)

This EU conformity declaration becomes null and void if any changes are made to the aforementioned machine that have not been authorised by the manufacturer.
The authorised representative for technical documentation is the signatory. For address refer to manufacturer.

Asbach-Bäumenheim
Date 10.12.2022

Johann Sailer
CEO GEDA GmbH

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1 General information

1.1 Information on the operating manual

This operating manual is an essential aid to operating the machine **successfully and hazard-free** (refer to chapter 2.1 Residual risks, page 18).

This operating manual contains important instructions on how to operate the machine **safely, correctly and efficiently**. Compliance with these instructions helps to avoid hazards and increases the reliability and service life of the machine.

The operating manual must be **available at the machine at all times** and must be read and applied by every person commissioned to work on/with the machine, e.g.:

- operation, fault elimination during work, disposal of operating materials and auxiliary supplies,
- assembly, maintenance (servicing, general maintenance, repair) and/or transport.

You will come across a series of illustrations and symbols while reading this manual. These are intended to help you navigate and understand this manual. The different meanings are explained below.

Text format	Meaning
Bold type	Emphasises particularly important words/sections
• List	Identifies lists level 1
– List	Identifies lists level 2
(brackets)	Item numbers
➢ Task instruction	Task instructions for personnel. Always given in chronological order

Images

The illustrations used refer to a specific machine type. They may only constitute a schematic representation of other machine types. The fundamental function and operation are not affected by this.

The structural elements in this operating manual appear as follows and have the following meaning:

⚠ DANGER

Type and source of the hazard: Danger to life
Consequence: Death/serious injury
Probability: imminent
➢ Measure for preventing the hazard

⚠ WARNING

Type and source: Risk of injury
Consequence: Serious injury
Probability: possible
➢ Measure for avoiding

⚠ CAUTION

Type and source: Risk of injury
Consequence: Minor injury
Probability: possible
➢ Measure for avoiding

ATTENTION

Type and source: Damage to the machine
Consequence: Property damage
Probability: possible
➢ Measure for preventing the damage

Safe working

Type and source: Failure to comply with health and safety regulations
Consequence: Risk for life and limb
Probability: possible
➢ Observe these instructions and proceed with caution.

Indicates information on using the machine economically or instructions for correct working procedures.

1.2 Abbreviations

The following abbreviations may be used in the manual.

Abbreviation:		Abbreviation:	
Max.	maximum	Fig.	figure
min.	minimum	Nm	Newton metre
Min.	minutes	km/h	kilometres per hour
etc.	et cetera	mph	miles per hour
poss.	possible	incl.	including
e.g.	for example	if nec.	if. necessary
ml	Millilitre	i.e.	that is
mm	Millimetre	reg.	regarding
°C	degrees Celsius	RH	relative humidity
°F	degrees Fahrenheit	approx.	approximately
ft.	feet	Ø	diameter
ft/min.	feet per minute	®	registered trademark
m/min	metres per minute	©	copyright
in.	inch	TM	trademark
.		%	per cent
lbs.	pounds	‰	per mil
lbf.-ft	pounds per feet	L_{PA}	sound pressure level
kg	kilogramme	L_{WA}	noise capacity level
L	litre	>	greater than
gal.	gallons	<	less than
kip.	kilopound	±	plus/minus

1.3 Identification data

Machine type:	GEDA 300 Z
Serial number:	16430 / 000670..., 14770 / 000672...
Year of construction:	Refer to name plate
Documentation version:	2024-09

1.4 Manufacturer's name and address

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1.6 Information for the employer

This operating manual is an essential component of the machine. The employer must ensure that operating personnel are **informed** about these guidelines.

The employer must supplement the operating manual with **operating instructions** based on existing national regulations for accident prevention and for the **protection of the environment**, including information regarding supervisory and reporting duties that take account of company-related specifics, e.g. with reference to work organisation, work procedures and the personnel employed.

In addition to the mandatory **regulations for accident prevention and industrial safety** that apply both in the country of use and at the place of use, accepted professional rules for safe and competent working must also be observed.

The employer must ensure that operating personnel wear **personal protective equipment** that is appropriate for the local conditions.

First aid equipment (first aid kit, etc.) must be kept within reach!

The employer or the user of the machine **must not make any changes, additions or modifications** to the machine that could impair safety without permission from the manufacturer! This also applies to installing and adjusting safety devices as well as to welding on load-bearing components.

Any **replacement and wearing parts** that are used must correspond to the technical requirements stipulated by GEDA . This is ensured with **original replacement parts**.

Only employ **qualified and/or trained personnel** for the tasks described in this manual.

The employer must clearly define the responsibilities of the personnel for operation/installation/maintenance.

The employer is obligated to train all persons authorised to use the machine in the correct handling of the machine before using it for the first time, according to the respective area of activity and responsibility of the authorised individual and using practical exercises.

This **training** must be documented and **repeated at regular intervals**.

The legally permissible minimum age must be observed!

1.7 Intended use

The 300 Z is a rack-and-pinion hoist constructed vertically that is suitable for temporary use at construction sites.
Any other locations or intended uses require written approval from the manufacturer.

The 300 Z is a material hoist that is temporarily erected and

- which may only be operated after the landing level safety gates are installed at each loading and unloading point
- which may only be operated at a wind speed of up to 72 km/h (20 m/sec., wind force 7-8 on the Beaufort scale)
  - at higher wind speeds, the load platform must be parked on the ground and taken out of operation

as a material hoist

- is intended exclusively for conveying goods.
- which may only be operated from outside the cordoned-off and signposted hazard area using the ground control and/or operated from the electric modules on the landing level safety gates

The instructions (refer to chapter 3 Technical data, page 25) must be observed and adhered to.

Any other use or any use going beyond this is not considered proper use.
The employer and the user accepts sole responsibility for any resulting damage to the machine. This applies equally to any unauthorised changes to the machine.

Intended use includes

- That the assembly, operation and maintenance provisions (assembly and operating manual) provided by the manufacturer are complied with).
- That the foreseeable misconduct of other persons is taken into consideration.
- That the national regulations are complied with.

1.7.1 Requirements for assembly personnel

The machine may only be assembled, operated and maintained by qualified persons who, based on their training, knowledge and practical experience, can ensure correct handling of the machine and who are aware of the risks associated with the scaffolding lifts. These persons must be instructed with the tasks of installation, dismantling and maintenance by the owner.

1.7.1.1 Assembly, service/maintenance specialist

A person who, due to qualified professional education, training and experience, is able to recognise risks and potential hazards during assembly/maintenance/repair work on the machine and subcomponents and can rectify these by introducing appropriate measures.

1.7.2 Operating personnel

The machine may only be operated by persons who, based on their training, knowledge and practical experience, can ensure proper handling.

These persons must

- have been appointed by the operating company
- have been appropriately instructed and informed about the risks
- be familiar with the operating manual
- observe national rules and regulations.

1.7.3 Improper use

The 300 Z

- is not designed for permanent installation
- must not be set up to be free-standing (without anchoring)
- must not be installed as a free-standing unit above 6.0 m without load weights on the foot sections
  - Use the front fall protection.

Consequences of improper use of the machine

- Danger to life and limb of the user or a third party.
- Damage to the machine and other objects.

2 General safety information

The machine has been designed and built according to the state of the art and recognised safety rules.

Nevertheless, hazards for personnel or third parties and/or damage to machinery and other tangible assets can occur during use, e.g. if the machine:

- is operated by untrained or uninstructed personnel,
- is not used for the intended purpose,
- is assembled, operated and serviced inappropriately.

Attached notices and warning signs must be observed!

Consequences of failure to comply with safety instructions

Failure to comply with safety instructions can result in hazards for personnel as well as for the environment and the machine. Failure to comply can lead to any claims for damages becoming invalid.

2.1 Residual risks

Residual risks remain from handling the machinery even when all safety conditions are complied with.

Anyone who works on and with the machine must be aware of these hazards and follow instructions that prevent these residual risks leading to accidents or damage.

- Do not remove any safety labels; replace any safety instructions that have become illegible.
- Hazard from improperly secured loads falling.
- Hazard when entering and leaving the platform.
- Hazard from damage to the mast sections, anchors or base unit.
- Hazard when working on the electrical system.
- Hazard from malfunctions in the control system.
- Hazards from uncoordinated working practices.
- Risk to persons by operating the platform with no cordoned- off area/base enclosure.
- Hazard from high wind speeds > 72 km/h.

2.2 Safety instructions for operating personnel

The operating manual must be kept within reach at all times **at the location where the machine is used**.

The machine may only be used in a technically flawless condition, **in accordance with the intended use, in a safety conscious manner, with awareness for the hazards** and in compliance with this operating manual! In particular, faults that could impair safety must be eliminated immediately!

In addition, the machine may only be operated when all **safety devices are installed and functioning**!

Check the machine for externally identifiable damage and defects **at least once each working day**! Immediately report any changes (including changes to the operating behaviour) to the office/person in charge. If necessary, shut down and secure the machine immediately! The **responsibilities** for different jobs within the context of operation and maintenance of the machine must be clearly defined and adhered to. This is the only way to avoid mistakes, especially in hazardous situations.

The relevant **rules for the prevention of accidents,** as well as other, generally recognised health and safety rules must be adhered to.

The hoist operator is obligated to wear **personal protective equipment** appropriate to the local conditions.

Switch-on and shut-down procedures, including emergency shut-down, must be observed in accordance with the operating manual for all work that affects operation and for conversions and adjustments to the machine and its safety devices.

2.3 Safety instructions for transport

Immediately report **transport damage** and/or **missing parts** to the supplier.

During transport tasks, wear a **safety helmet, safety shoes and protective gloves**!

Never walk below suspended loads!

Only use **appropriate, standardised and tested lifting devices** (forklifts, cranes) and load attachment gear (lifting beam, round slings, lifting straps, rope slings, chains) for transport at the assembly site.

When selecting lifting and slinging equipment, always take into account the **maximum suspended loads!**

Dimensions and weights, (refer to chapter 3 Technical data, page 25).

Only load and transport **the carefully dismantled, packed and lashed machine**.

Always ensure that the machine is transported **without being knocked or jolted**. Ensure that the machine is stable during transport. Support the platform before strapping it down for transport.

Observe the **symbols on the packaging**.

Only attach gear to the **designated attachment points**.

Always **secure transported loads against falling or tipping over**!

The machine must only be transported/installed on foundations with sufficient load capacity.

Ensure that stable balance is maintained when transporting with forklift trucks.

2.4 Safety instructions for operation

Only operate the machine in accordance with the operating manual, **when it is in full working order, and in a safety and hazard-conscious manner**.

If **work is interrupted, switch the machine off at the main switch** and secure it with a padlock against being switched on again.

Fundamentally, the machine must be **secured against unauthorised use** (disconnect from power)!

In situations that present a **risk to the operating personnel** or the machine, shut down the machine by pressing the **EMERGENCY STOP** button.

No one is allowed to stand under the machine. Ensure that the hazard area is suitably cordoned off at the customer's site. (Install cordoned off area or base enclosure.)

The machine must not be used as steps or a climbing aid. Only use tested and stable steps/climbing aids. Keep steps/climbing aids free of dirt and soiling.

Protection to prevent persons from falling must be provided at loading heights above 2.0 m. (Install landing level safety gates.)

Move load platform down and shut down machine at wind speeds of >72 km/h. (Wind force 7-8, wind breaks branches off trees, makes walking very difficult)

2.5 Safety instructions for maintenance and troubleshooting

Operating personnel must be **informed** about how to carry out special work and repair work before starting.

Deadlines that are stipulated or stated in the maintenance manual for recurring **tests/inspections** must be adhered to.

The **maintenance area** must be **cordoned off** extensively as required!

Before carrying out any maintenance work on the machine, always

- unload it,
- switch it off at the main switch.

All **maintenance and repair work** is only permitted with the **main switch turned off** or **with the mains plug disconnected**. Manual intervention while the machine is running can lead to serious injuries and is therefore prohibited. If it is necessary to **switch the machine on during** such work, this must only be done while **complying with special safety measures**.

If the machine has been completely shut down for these tasks, it must be secured against being switched on unintentionally:

- Actuate the **EMERGENCY STOP** button
- **Lock** the **main switch** using a shackle lock and
- attach a **warning notice** to the switch box (main switch).

Any faults that could impair safety must be rectified immediately.

Workshop **equipment that is suitable for the specific work** is absolutely necessary for carrying out **maintenance and inspection work**. When carrying out maintenance tasks at greater heights, a fall protection system must be worn! Keep all handles, railings and the platform free from dirt and contamination.

When working below the platform, secure it using appropriate means (e.g. bolts, mast clamps)

Before starting service/repair tasks, **clean** any oil, operating fluids, contamination and maintenance products from the machine, paying special attention to connections and threaded connections. Do not use abrasive cleaning materials. **Screw connections that were released** during maintenance and inspection work must always be tightened again using the necessary **torques**!

Do not change, remove, bypass or bridge safety devices.

If it is necessary to dismantle safety devices during maintenance and repair work, the safety devices must be installed and checked immediately after completion of the maintenance and repair tasks!

Do not make any changes, additions or modifications to the machine. This also applies to the installation and adjustment of safety devices such as limit switches.

Immediately replace damaged or detached information and warning signs, as well as safety labels.

Ensure that operating and auxiliary materials, as well as replaced parts, are disposed of safely and in an environmentally friendly manner (refer to chapter 12 Disposal, page 116).

The aforementioned safety measures also apply to troubleshooting.

For further instructions on maintenance, maintenance intervals and servicing (refer to chapter 9 Maintenance - Checking - Cleaning, page 85), (refer to chapter 10 Malfunctions – diagnosis – repair, page 105).

2.6 Safety when working on the electric system

If there are **faults on the electrical system** of the machine, it must be **shut down immediately using the main switch** and secured with a padlock or the mains plug must be disconnected!

Work on the electrical equipment of the machine must only be carried out by **qualified electricians** working in accordance with electrical engineering regulations! Only professional electricians may access the electrical system of the machine and carry out work on them. **Always keep the switch boxes closed** whenever they are left unattended.

Never work on live parts! System parts on which inspection, maintenance or repair work is to be carried out must be **disconnected from the mains power**.
Operating equipment that has been disconnected must be secured against being switched back on unintentionally or automatically (lock away fuses, block isolating switches, etc.). The disconnected electrical components must first be tested to ensure they are voltage-free, then earthed, short-circuited and isolated from neighbouring live components.

If **tasks have to be carried out on live components** (only in exceptional circumstances), an additional person must be present to operate the **EMERGENCY STOP** button or main switch in the event of an emergency. Use only insulated tools!

During repairs, ensure that **design features** are not **modified** so that they have a negative influence on safety. (e.g. creeping distances, clearances and distances must not be reduced by insulation).

Fault-free **earthing** of the electrical system must be ensured by a **protective earth system**.

3 Technical data

3.1 Operating and environmental conditions

The machine may only be operated when the following operating and environmental conditions are adhered to:

- Storage in dry rooms, in order to prevent corrosion.
- No jolts or vibrations.
- No abrasive, corrosive substances.
- The machine must be protected against pest damage (insects, rodents, etc.).
- Before transport/storage, the machine must be cleaned and checked for signs of damage.

Temperature range:	minimum	- 20 °C
	maximum	+40 °C
Humidity (relative):		80 % RH

Wind speed:

Operation/maintenance/repair	maximum	72 km/h
Assembly:	maximum	45 km/h

It may be necessary to cease or prohibit operation of the machine in extreme weather conditions, even if the operating and ambient conditions are within the limits stated. For example, if heavy frost and a storm occur together. In these cases, the employer must provide appropriate regulations.

Do not use during storms (lightning)!

Atmosphere at the location of use during material transport

When transporting material, this must not lead to a concentration of abrasive/corrosive substances and of explosive fine dusts. If this cannot be safely excluded, the corrosion protection and/or the functional reliability of the electrical components must be checked at regular intervals and they should, if necessary, be replaced. Fine particulate matter must be removed.

3.2 Emissions

Sound capacity level L_{WA}:	< 78 db (A)

3.3 Electrical connected loads

300 Z with 230 V drive

Power	1.8 kW
Rated current	10.5 A
Duty cycle	S3 (60%)

Base unit

Operating voltage	230 V / 50 Hz / 1 x 16 A / 1 Ph
Protective system	IP 54 (NEMA 3)
Working socket (in the car)	230 V / 50 Hz, 16 A

➢ Connect the mains supply line (3 m) for the hoist to the building site main cabinet.

A rubber hose line measuring at least 3 x 2.5 mm^2 is required for extending the mains supply line (see accessories) to avoid voltage drop and therefore any loss in motor performance.

For supply lines over 50 m long, you should use a cable of at least 3 x 4 mm^2.

If the power supply is poor, unplug any other current consumers.

A construction site distribution cabinet (in accordance with IEC 60439-4:2005) with a

- min. 16 A fuse protection of the supply point and a
- residual current device (RCD)

are required.

300 Z with 400 V drive

Power	2.5 kW
Power consumption	5.4 A
Duty cycle (DC)	S3 (60%)

Base unit

Operating voltage	400 V / 50 Hz / 3 x 16 A / 3 Ph
Protective system	IP 54 (NEMA 3)
Working socket (in the car)	230 V / 50 Hz, 16 A

Mains connection

➢ Connect the mains supply line (3 m) for the construction hoist to the construction site main cabinet (CEE plug 5x16 A, 6h, red with phase inverter).

A rubber hose line measuring at least 5 x 2.5 mm^2 [AWG-Nr. 14] is required for extending the mains supply line (see accessories) to avoid voltage drop and therefore any loss in motor performance.

3.4 Speeds

Lifting speed

Construction hoist	20 m/min. (230 V) 30 m/min. (400 V)

Safety gear for 300 Z

Triggering speed	approx. 35 m/min.

3.5 Heights

Assembly height:	50 m (230 V) / 100 m (400 V)

Height

Up to max. 1000 m above sea level.

The technical data, such as e.g. the load capacity, is only ensured up to this assembly site elevation. (Motor heating)

3.6 Mast

Use only original GEDA mast sections!

Fig. 1: Mast section

Ladder section 1 m (with gear rack and captive screws)

Weight: 14 kg

Ladder section 2 m (with gear rack and captive screws)

Weight: 25 kg

3.7 Load capacity, dimensions and weights

Load capacity, dimensions and weights

Length x width x height (internal)	1.40 m x 0.75 m x 1.80 m
Load capacity	300 kg
Base unit	215 kg

Accessories

Load platform	60 kg
Standard push-on frame for the load platform	6,5 kg
Special push-on frame for the load platform	14 kg

Extension to base unit

Mast brackets	4 kg
Set of fixing tubes for fastening to walls	8.4 kg
Trailing cable guide	1.5 kg
Landing level stop bar	2.6 kg

Accessories

20 m extension lead for control (5-pole)	5 kg

300 Z with 230 V drive

Weights

Cable bin with 25 m trailing cable	27 kg
Cable bin with 50 m trailing cable	37 kg

Accessories

Cable drum 33 m, 3x2,5 mm²	8 kg

300 Z with 400 V drive

Weights

Cable bin with 25 m trailing cable	48 kg
Cable bin with 50 m trailing cable	62 kg
Cable bin with 75 m trailing cable	76 kg
Cable bin with 100 m trailing cable	90 kg
Trailing cable, 25 m each	+12 kg

Accessories

25 m extension lead for control (400 V/16A)	8.5 kg
50 m extension lead for control (400 V/16A)	14.5 kg

Dimensions/required space

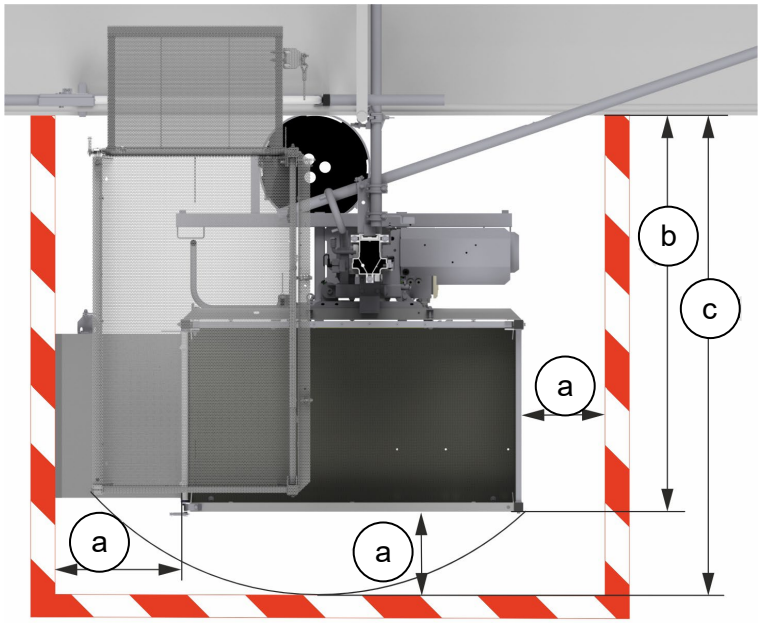


Fig. 2: Space required in front of scaffolding

a 0.50 m

b 1.70 m

c 2.03 m

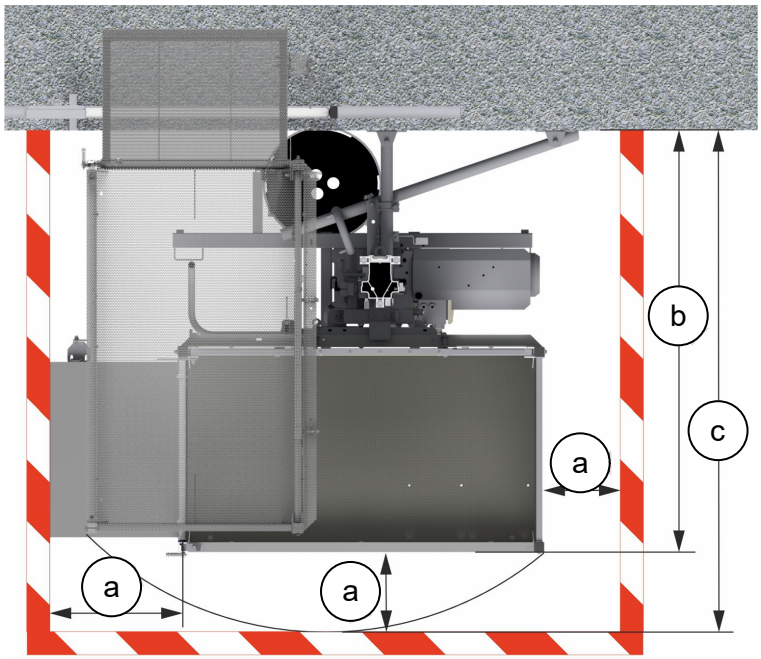


Fig. 3: Space required in front of a wall

a 0.50 m

b 1.88 m

c 2.20 m

4 Transport

ATTENTION

Damage to the machine

➢ The machine has to be transported by experienced and competent personnel.

4.1 Inspection on receiving the machine

- Check the shipment for transport damage and completeness according to the purchase order.
- Dispose of packaging/protective covers according to legal requirements or retain them for later transport.
- Immediately notify the freight carrier (haulage company) and dealer of any transport damage.

4.2 Loading and unloading the machine

- Wear a safety helmet, safety shoes and safety gloves when loading the machine!
- Only use appropriate standardised and tested lifting gear and slinging gear (round slings, lifting straps, sling ropes, chains) for transport to the assembly site.
- When selecting lifting and load attachment gear, always take into account the **maximum suspended loads!**

The machine parts are loaded and unloaded with a crane or directly without lifting gear using a special single axle trailer.

➢ Thread the round sling through the crane lug (1) on the trolley.

➢ Hang the crane hook on the round sling.

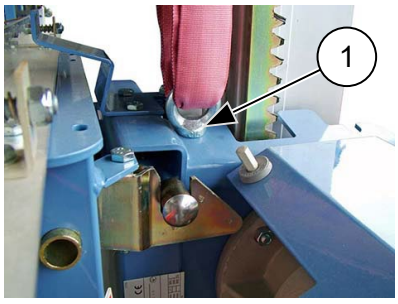


Fig. 4: Crane lug

Weight of the base unit with cable bin approx. 350 kg

4.2.1 Transport with single axle trailer

Fig. 5: Transport with single axle trailer

Transport and loading is described in the Operating Manual for the single axle trailer.

5 Assembly

⚠ WARNING	
	**Risk of injury due to inexpert assembly** ➢ The hoist must be installed according to the Assembly and Operating Manual under the guidance of a qualified person appointed by the contractor! This specialist must be familiar with the Assembly and Operating Manual, have sufficient experience and be informed about the risks involved in working with the hoist. Assembly personnel (refer to chapter 1.7.1.1 Assembly, service/maintenance specialist, page 17)

5.1 Safety instructions for assembly

- Also observe the safety instructions (refer to chapter 2 General safety information, page 18).
- Before starting work at the place of use, acquaint yourself with the working environment, e.g. obstacles in both work and traffic areas, ground load bearing capacity and necessary barriers between the construction site and public areas.
- Before each time the machine is assembled, check whether all parts of the lift such as e.g. ladder parts, electrical cables and control system, are in perfect condition. Do not start the hoist if there is any damage! – Replace damaged parts immediately.
- Cordon off the machine danger area.
  - Ensure that the danger zone at the lower loading point is protected by a barrier except at the point of access to the load carrying device.
  - Identify the danger zone of the rack and pinion hoist.
  - No one is permitted to stand beneath the load platform.
- Install the equipment on a stable foundation, align it in a precisely vertical position and anchor it to the building.
  - Ensure that the hoist is fastened expertly to a suitable structure, e.g. brick wall, reinforced concrete ceiling, steel framework or scaffolding. A qualified construction specialist must verify that this structure can absorb the anchoring forces. This also depends on which fasteners have to be used.
- At loading positions from **2,0 m height** protection to prevent persons from falling must be provided (only use original GEDA landing-level safety doors).
- Observe the load capacity of the hoist.
  - If the red control light on the trolley switch box illuminates and an alarm signal sounds, the load platform is overloaded. Immediately reduce the loading weight! In this case, the control is interrupted until the warning light goes off and the alarm signal is silent.

- During assembly, the **protruding mast/ladder sections must only be moved a max. 3 m** over the last anchorage point! (Upper edge of trolley to rail bracket).
- During assembly, never do the following from the load platform:
  - reach or lean into the travel path during travel.
  - allow parts to project into the travel path during ascent/descent.
  - stand on the load.
  - exit the load platform to climb onto the ladder or building.

⚠ DANGER

Risk of death

Assembly during high winds

- ➢ The maximum wind speed during assembly is 45 km/h!
- ➢ In the event of wind speeds ≥45 km/h, bring the car down to the ground and cease assembly.
- ➢ Observe the height-dependent change in wind speed!

⚠ DANGER

Danger to life

- ➢ Do not use in case of fire!

5.2 Requirements for the assembly site

5.2.1 Substructure

- The foundation must be horizontal and have sufficient load bearing capacity.
  - The foundation must be compacted according to the ground load [kN/m²] (refer to assembly height).
- Depending on the assembly height, for example, wooden planks or steel sheeting, can be used as load distributing base supports.

5.2.2 Ground pressure

The total weight (see table) of the hoist and mast sections is transferred to the subsurface through the foot section support.

Load capacity:	300 kg
Mass per mast section: (with anchoring and cable guide)	28 kg
Length per mast section:	2.1 m
Height of base unit:	2.0 m
Empty weight of the base unit with load platform and cable bin (100 m):	approx. 350 kg
Base area without base support (0,5 m x 0,5 m)	0.25 m²

Assembly height in m	10	20	30	40	50
Number of mast sections required	4	9	14	19	24
Total weight (kg)	760	900	1040	1180	1320
Ground pressure (kN/m²)	30	36	42	47	53

Assembly height in m	60	70	80	90	100
Number of mast sections required	29	34	39	44	49
Total weight (kg)	1460	1602	1742	1880	2020
Ground pressure (kN/m²)	58	64	70	75	81

5.3 Anchoring requirements

W = Mast projection above the top mast bracket
[during operation and assembly]

Z = Maximum distance between the lower edge of the car/platform and the top mast bracket

H = Installed height

G = Vertical distance between mast brackets

E = Vertical distance between ground [foot section] and bottom mast bracket

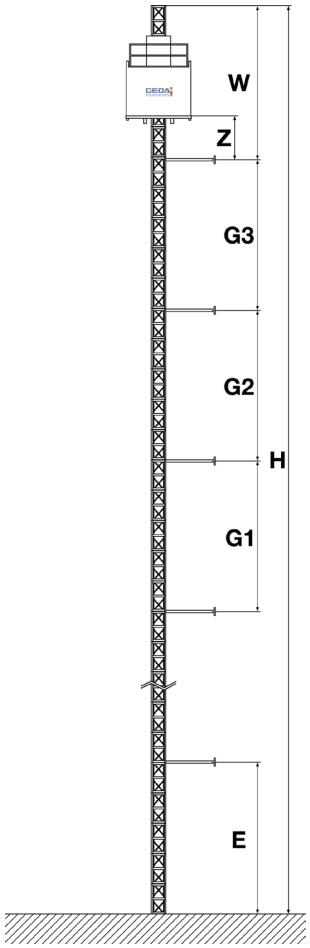


Fig. 6: Anchoring diagram

		min.	max.
W =		-	3,0 m
Z =		-	0.60 m
H =	with 230 V drive	-	50 m
	with 400 V drive		100 m
G =		-	4 m
E =		2 m	3 m

Recommendation:

Even vertical spacing between the mast brackets should be ensured!

Dimension **W** should not be greater than the underlying dimension **G**, or for low superstructures, not greater than dimension **E**.

5.3.1 Anchoring forces

The stated values apply:

- Per anchoring point.
- For the assembly geometry shown.

In the event of differing structures, the corresponding values must be requested!

The stated values do not include any safety factors. The wind loads used to determine the anchoring forces refer to the European wind regions according to EN 12158 / EN 12159.
The wind load in other regions must be calculated according to ISO 4302 and the next highest value in the table below must be applied.

The employer is responsible for applying the correct wind region. Local conditions such as:

- mountains, bays, valleys,
- house gullies, thoroughfares, buildings, etc.

can create wind turbulence and make it necessary to apply another wind region.

European wind map

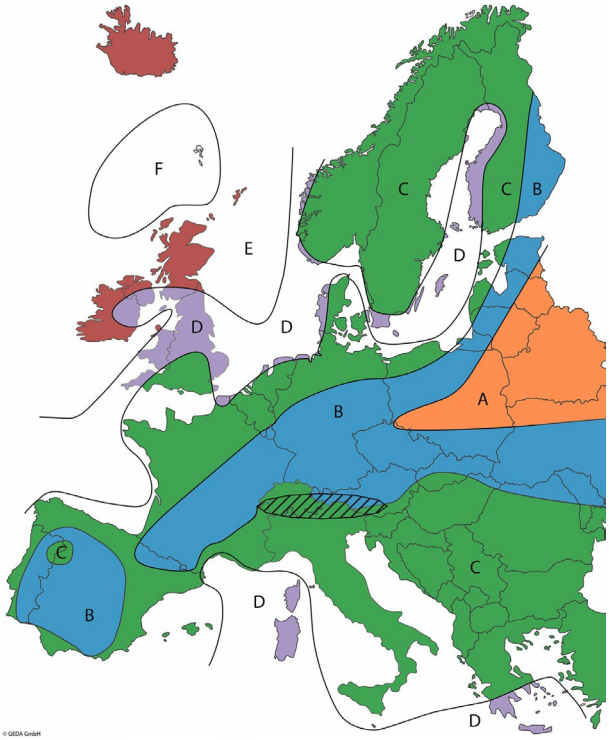


Fig. 7: European wind regions

Erection height H [m]	Wind forces for geographical regions [N/m²]			
	Wind region			
	A/B	C	D	E
0<H≤10	544	741	968	1225
10<H≤20	627	853	1114	1410
20<H≤50	757	1031	1347	1704
50<H≤100	879	1196	1562	1977
100<H≤150	960	1306	1706	2159
150<H≤200	1023	1393	1819	2303

Assembly in front of a wall

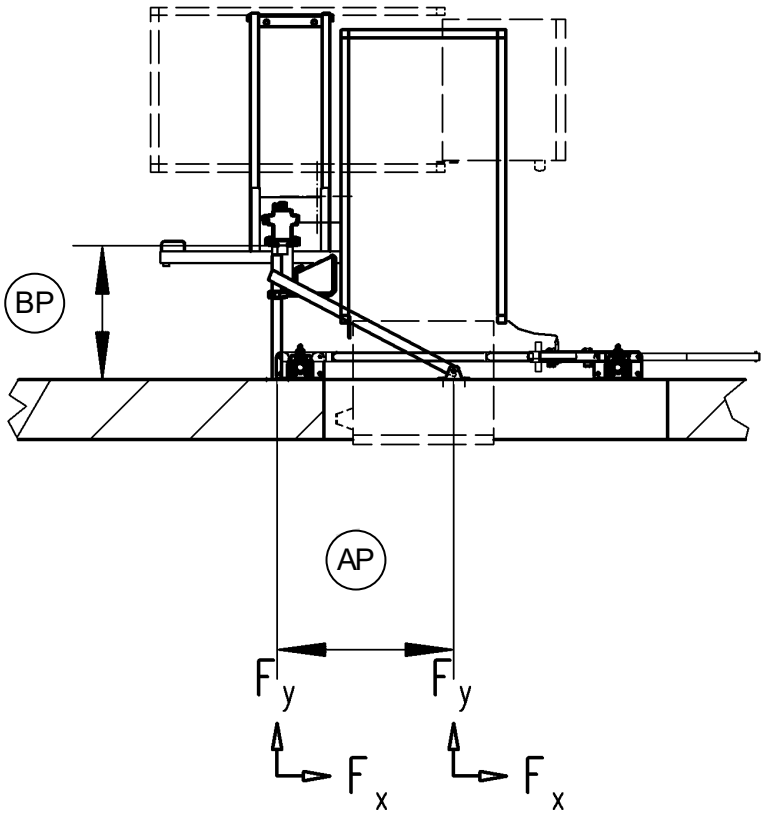


Fig. 8: Assembly in front of a wall

AP = approx. 0,82 m, BP = approx. 0,68 m

Anchoring forces [kN] with maximum mast projection

AP ≥ BP x 1.2		Top anchor point		Other anchor points	
	Assembly height	Fx	Fy	Fx	Fy
Wind region A/B	0 < H ≤ 10 m	± 3.5	± 2.7	± 2.6	± 2.2
	10 < H ≤ 20 m	± 3.5	± 2.7	± 2.6	± 2.2
	20 < H ≤ 50 m	± 3.5	± 2.7	± 2.6	± 2.2
	50 < H ≤ 100 m	± 3.5	± 2.7	± 2.6	± 2.2
Wind region C	0 < H ≤ 10 m	± 3.5	± 2.7	± 2.6	± 2.2
	10 < H ≤ 20 m	± 3.5	± 2.7	± 2.6	± 2.2
	20 < H ≤ 50 m	± 3.5	± 2.7	± 2.6	± 2.2
	50 < H ≤ 100 m	± 3.8	± 2.7	± 2.6	± 2.2
Wind region D	0 < H ≤ 10 m	± 3.5	± 2.7	± 2.6	± 2.2
	10 < H ≤ 20 m	± 3.5	± 2.7	± 2.6	± 2.2
	20 < H ≤ 50 m	± 3.7	± 2.7	± 2.7	± 2.2
	50 < H ≤ 100 m	± 4.7	± 3.3	± 3.4	± 2.2
Wind region E	0 < H ≤ 10 m	± 3.5	± 2.7	± 2.6	± 2.2
	10 < H ≤ 20 m	± 3.5	± 2.7	± 2.6	± 2.2
	20 < H ≤ 50 m	± 4.2	± 2.9	± 3.1	± 2.2
	50 < H ≤ 100 m	± 5.4	± 3.8	± 3.9	± 2.8

Anchoring forces [kN] without mast projection

AP ≥ BP x 1.2		Top anchor point		Other anchor points	
	Assembly height	Fx	Fy	Fx	Fy
Wind region A/B	0 < H ≤ 10 m	± 2.6	± 2.2	± 2.2	± 2.0
	10 < H ≤ 20 m	± 2.6	± 2.2	± 2.2	± 2.0
	20 <H ≤ 50 m	± 2.6	± 2.2	± 2.2	± 2.0
	50 <H ≤ 100 m	± 2.6	± 2.2	± 2.5	± 2.0
Wind region C	0 < H ≤ 10 m	± 2.6	± 2.2	± 2.2	± 2.0
	10 < H ≤ 20 m	± 2.6	± 2.2	± 2.2	± 2.0
	20 < H ≤ 50 m	± 2.6	± 2.2	± 2.2	± 2.0
	50 <H ≤ 100 m	± 2.6	± 2.2	± 2.2	± 2.4
Wind region D	0 < H ≤ 10 m	± 2.6	± 2.2	± 2.2	± 2.0
	10 < H ≤ 20 m	± 2.6	± 2.2	± 2.2	± 2.0
	20 <H ≤ 50 m	± 2.6	± 2.2	± 2.7	± 2.0
	50 < H ≤ 100 m	± 2.6	± 2.2	± 3.4	± 2.0
Wind region E	0 < H ≤ 10 m	± 2.6	± 2.2	± 2.2	± 2.0
	10 < H ≤ 20 m	± 2.6	± 2.2	± 2.4	± 2.0
	20 < H ≤ 50 m	± 3.1	± 2.2	± 3.1	± 2.2
	50 < H ≤ 100 m	± 3.9	± 2.8	± 3.9	± 2.8

Assembly in front of a scaffolding

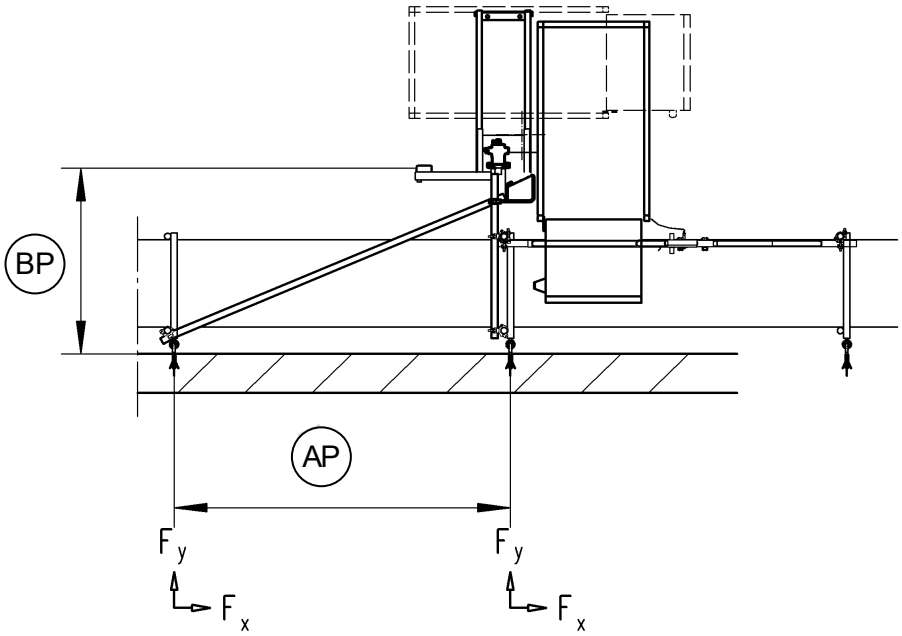


Fig. 9: Assembly in front of a scaffolding

Scaffold field depth = 0,70 m

AP = approx. 2.5 m, BP = approx. 1.38 m

Anchoring forces [kN] with maximum mast projection

AP ≥ BP x 1.7		Top anchor point		Other anchor points	
	Assembly height	Fx	Fy	Fx	Fy
Wind region A/B	0 < H ≤ 10 m	± 3.2	± 3.0	± 2.2	± 2.1
	10 < H ≤ 20 m	± 3.2	±3.0	± 2.2	± 2.1
	20 < H ≤ 50 m	± 3.2	±3.0	± 2.2	± 2.1
	50 < H ≤ 100 m	± 3.2	± 3.0	± 2.2	± 2.1
Wind region C	0 < H ≤ 10 m	± 3.2	± 3.0	± 2.2	± 2.1
	10 < H ≤ 20 m	± 3.2	± 3.0	± 2.2	± 2.1
	20 < H ≤ 50 m	± 3.2	± 3.0	± 2.2	± 2.1
	50 < H ≤ 100 m	± 3.2	± 3.0	± 2.2	± 2.1
Wind region D	0 < H ≤ 10 m	± 3.2	± 3.0	± 2.2	± 2.1
	10 < H ≤ 20 m	± 3.2	± 3.0	± 2.2	± 2.1
	20 < H ≤ 50 m	± 3.2	± 3.0	± 2.2	± 2.1
	50 < H ≤ 100 m	± 3.9	± 3.4	± 2.9	± 2.5
Wind region E	0 < H ≤ 10 m	± 3.2	± 3.0	± 2.2	± 2.1
	10 < H ≤ 20 m	± 3.2	± 3.0	± 2.2	± 2.1
	20 < H ≤ 50 m	± 3.6	± 3.1	± 2.6	± 2.3
	50 < H ≤ 100 m	± 4.5	± 3.9	± 3.3	± 2.9

Anchoring forces [kN] without projecting mast

AP ≥ BP x 1.7		Top anchor point		Other anchor points	
	Assembly height	**Fx**	**Fy**	**Fx**	**Fy**
Wind region A/B	0 < H ≤ 10 m	± 2.2	± 2.1	± 1.8	± 1.9
	10 < H ≤ 20 m	± 2.2	± 2.1	± 1.8	± 1.9
	20 < H ≤ 50 m	± 2.2	± 2.1	± 1.8	± 1.9
	50 < H ≤ 100 m	± 2.2	± 2.1	± 1.8	± 1.9
Wind region C	0 < H ≤ 10 m	± 2.2	± 2.1	± 1.8	± 1.9
	10 < H ≤ 20 m	± 2.2	± 2.1	± 1.8	± 1.9
	20 < H ≤ 50 m	± 2.2	± 2.1	± 1.9	± 1.9
	50 < H ≤ 100 m	± 2.2	± 2.1	± 2.4	± 2.0
Wind region D	0 < H ≤ 10 m	± 2.2	± 2.1	± 1.8	± 1.9
	10 < H ≤ 20 m	± 2.2	± 2.1	± 1.8	± 1.9
	20 < H ≤ 50 m	± 2.3	± 2.1	± 2.3	± 2.0
	50 < H ≤ 100 m	± 2.9	± 2.5	± 2.9	± 2.5
Wind region E	0 < H ≤ 10 m	± 2.2	± 2.1	± 1.8	± 1.9
	10 < H ≤ 20 m	± 2.2	± 2.1	± 2.0	± 1.9
	20 < H ≤ 50 m	± 2.6	± 2.3	± 2.6	± 2.3
	50 < H ≤ 100 m	± 3.3	± 2.9	± 3.3	± 2.9

5.4 Assembly plan

The assembly plan shows the basic assembly stages and their chronological sequence. However, installation is always based on the detailed instructions in this manual and the approved installation drawings.

Depending on the working equipment available / number of installation engineers, and the construction-site conditions (e.g. crane), tasks may be carried out in parallel or the sequence of the installation steps may be changed.

If the sequence is changed, the amended assembly plan must be checked by the employer to ensure that it is sensible and that there are no potential hazards and it must be subsequently approved.

Assembly plan	
	Assembling the base unit • Align base unit. • Secure base unit against slipping or tilting. • Install the cable bin. • Secure the ground station.
	**Electrical connection** • Connect/switch on the electrical components. • Insert mains plug at the building site mains distributor.
	Assembling/extending the mast • Install the mast sections. • Assemble the mast brackets. • Align the mast. • Install the cable guides.
	Place the UP-END stop bar. **Place the EMERGENCY-LIMIT stop bar.**
	**Securing the loading positions with landing level safety gates** • Install the landing level safety gates. • Place the **LANDING LEVEL stop bars** at the stop positions. • Install the landing level modules.
	Inspecting/checking after installation • Check the machine for initial startup. • Check the machine before each startup.
	Train authorized personnel

Legend		
mechanical	electrical	inspections

5.5 Assembling the base unit

The machine may only be installed and used vertically!

The base unit must be aligned parallel to the building or scaffolding.

Place the foot section on the support points (support plate of the spindles and, above all, on the foot section support beneath the masts) on load-distributing, level base supports and align.
Observe the load capacity of the foundation!

ATTENTION

Damage to the foot section

Property damage

- ➢ The foot section must be underpinned beneath the mast/masts, the spindles are only used for adjustment of the base unit, not for transferring forces from the mast sections.

⚠ DANGER

Risk of death

Slipping or tilting of the base unit

- ➢ Anchor the foot section to the ground.
- ➢ Secure at least two support plates with screws to prevent shifting. If this is not possible, a mast bracket has to be fastened accordingly deep (approx. 2 to 3 m above the ground and, for scaffolding, below the decking).

Safe working

Checks after setup

The base unit has to be in a stable position for assembly of the mast sections by personnel!

5.5.1 Assembling switch cabinet with main switch

1. Place the bracket with switch cabinet onto the foot section and screw down.
2. Plug in the trailing cable plug (coming from the cable bin below), and connect the plug socket bar.
3. Connect the mains plug to the building site main cabinet.
4. Insert the manual control into the blue plug sockets.
5. Insert the connection cable to the electric module of the landing gate or dummy plug into the red plug socket.
   ✓ The machine is ready for operation!.

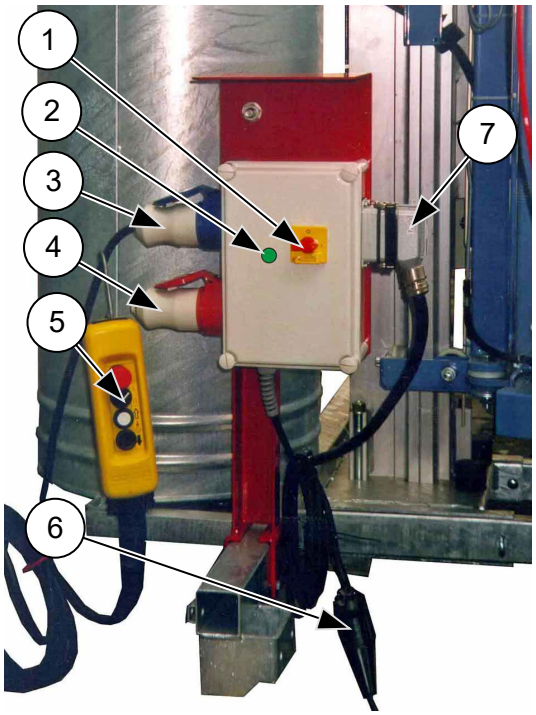


Fig. 10: Switch cabinet with main switch

1 Main switch

2 Ready for operation control light (only with 400 V)

3 Plug socket (blue, 7-pole) for manual control

4 Plug socket (red, 7-pole) for electric module on the landing levels (or dummy plug during assembly)

5 Manual control (ground control)

6 Mains plug- Earthing contact socket (230 V 50 Hz)
CEE. Plug 5 x 16 A (400 V 50 Hz)

7 Plug socket for trailing cable (to the cable bin)

5.5.2 Replacing the cable bin

When installing the cable bin, ensure that the trailing cable maintains the correct twist. If rotation is necessary, turn the cable bin only together with the cable holder.

The cable holder must not be rotated in the opposite direction to the cable bin!

The cable bin and cable holder must not be rotated in opposite directions because this would change the twist of the round cable when it is wound in!

If not the entire length of the cable is used, the cable may be compressed.

1. Unplug the trailing cable on the switch cabinet of the sliding carriage.
2. Dismantle the eye bolt (1) and screw (2) with the track roller.
3. Take the trailing cable holder (3) out of the mount and place it in the cable bin.

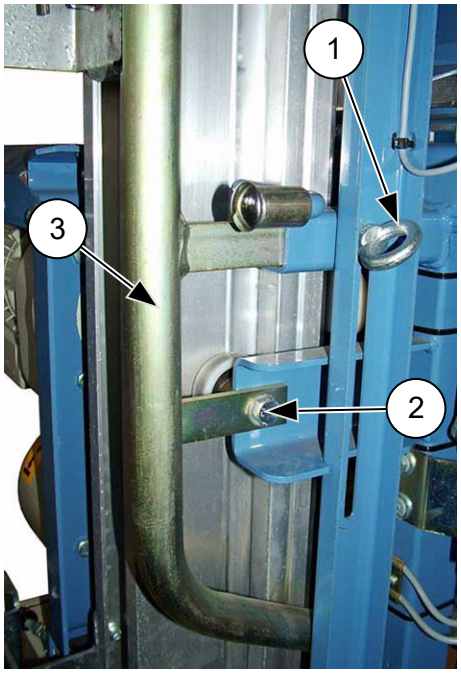


Fig. 11: Replacing the cable bin 1

4. Unplug the trailing cable on the switch cabinet with main switch.
5. Release both attachment bolts on the cable bin at the foot section and remove.

6. Release the nuts (4) on the cable bin mount and turn the screw with the clamp (5) until the mount can be removed from the groove of the mast.

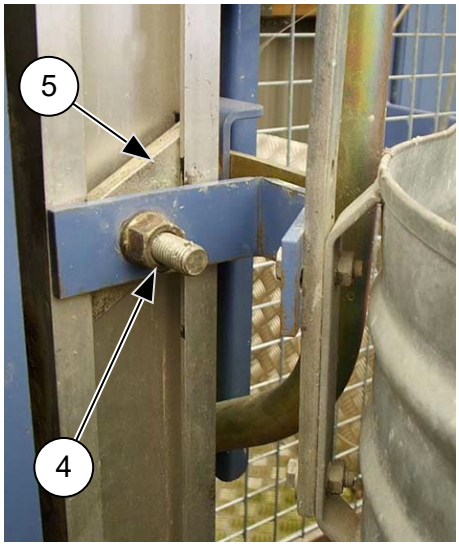


Fig. 12: Replacing the cable bin 2

7. Raise the cable bin slightly and remove.
8. Lift the cable bin with the necessary length of trailing cable onto the foot section and secure with two screws to the foot section.
9. Insert bracket clamp into the groove of the mast, turn the screw and tighten the nut.
10. Push the trailing cable holder into the bracket on the sliding carriage, secure with the eye bolt and screw to the track roller.
11. Plug in the trailing cable coupling (cable holder) at the sliding carriage switch cabinet.
12. Plug in the trailing cable plug at the switch cabinet with main switch.
13. Plug in the mains supply line at the building site main cabinet and switch on the main switch.

After switching on the main switch at the switch cabinet with main switch (on machines with a 400 V drive), a green control light must light up, indicating that it is ready for operation.

If the control light does not light up: (refer to chapter 10 Malfunctions – diagnosis – repair, page 105).

5.6 Extending the mast

5.6.1 Anchoring the mast

If the equipment is erected in front of scaffolding, it must be anchored to the building.

It can also be anchored directly to the scaffolding if the scaffolding has been designed for the additional load (refer to Anchoring forces).

Assembly and anchoring of the mast sections is fundamentally carried out from the platform and scaffolding. If assembling without scaffolding, anchoring is carried out on the building from the assembly plank.

- ➢ Set the anchor at a height of approximately 2-3 m (where the scaffolding is below flooring level).
- ➢ Insert mast bracket with clamp into the groove of the mast, turn and tighten the nut.

The base mast can be anchored up to a height of 2 m. A mast section must be installed on the base mast at higher anchoring points.

If it is not possible to place an anchor at a height of 2-3 m , secure the foot section against shifting (e.g. with pegs or dowels). Further erection up to the first mast bracket at a max. height of 4 m must be carried out from the scaffold.

Anchoring to a wall

1. Clamp fixing tube (1) to both scaffold couplings on the mast bracket (2) and guide it to the wall.

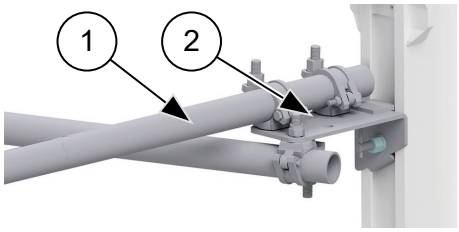


Fig. 13: Anchoring to a wall 1

2. Peg the fixing tube to the wall or bolt using through bolts.
3. Clamp bracing tube (3) into the mobile coupling on the mast bracket and guide it to the wall.
   ⓘ Choose the widest possible distance between both anchoring points on the wall (at least 0.80 m). (refer to chapter 5.3.1 Anchoring forces, page 37).

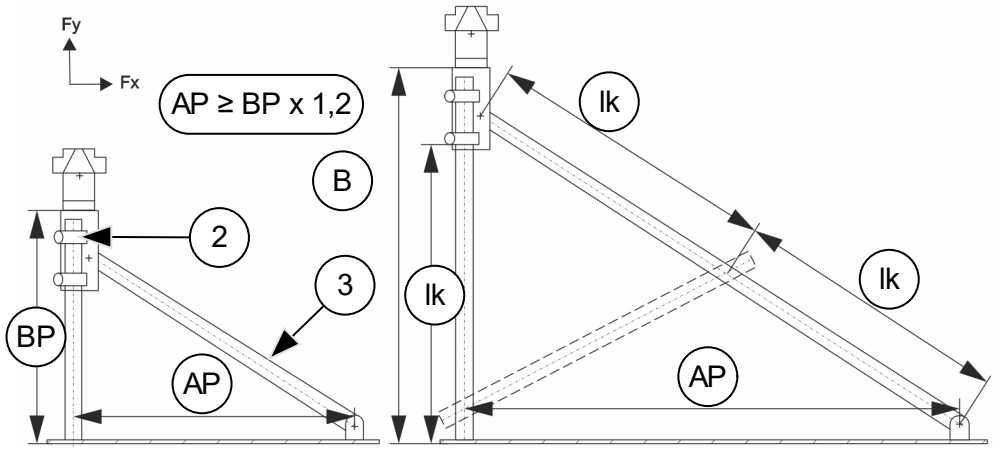


Fig. 14: Anchoring to a wall 2

AP min. 0,82 m

BP 0,68 m

Transverse braces must be put up with a free anchoring tube length l_k above 4,0 m.

Anchoring to scaffolding

Pipe dimensions: Ø 48,3 x 3,2 mm St 37, length depending on scaffold width

- Clamp the fixing tube (1) into both rigid couplings on the mast bracket (2)); the pipe is secured to the scaffold by two scaffold couplings.
- Clamp the bracing tube (3) into the mobile coupling on the mast bracket, guide it to the vertical frame and secure it with a scaffold coupling.

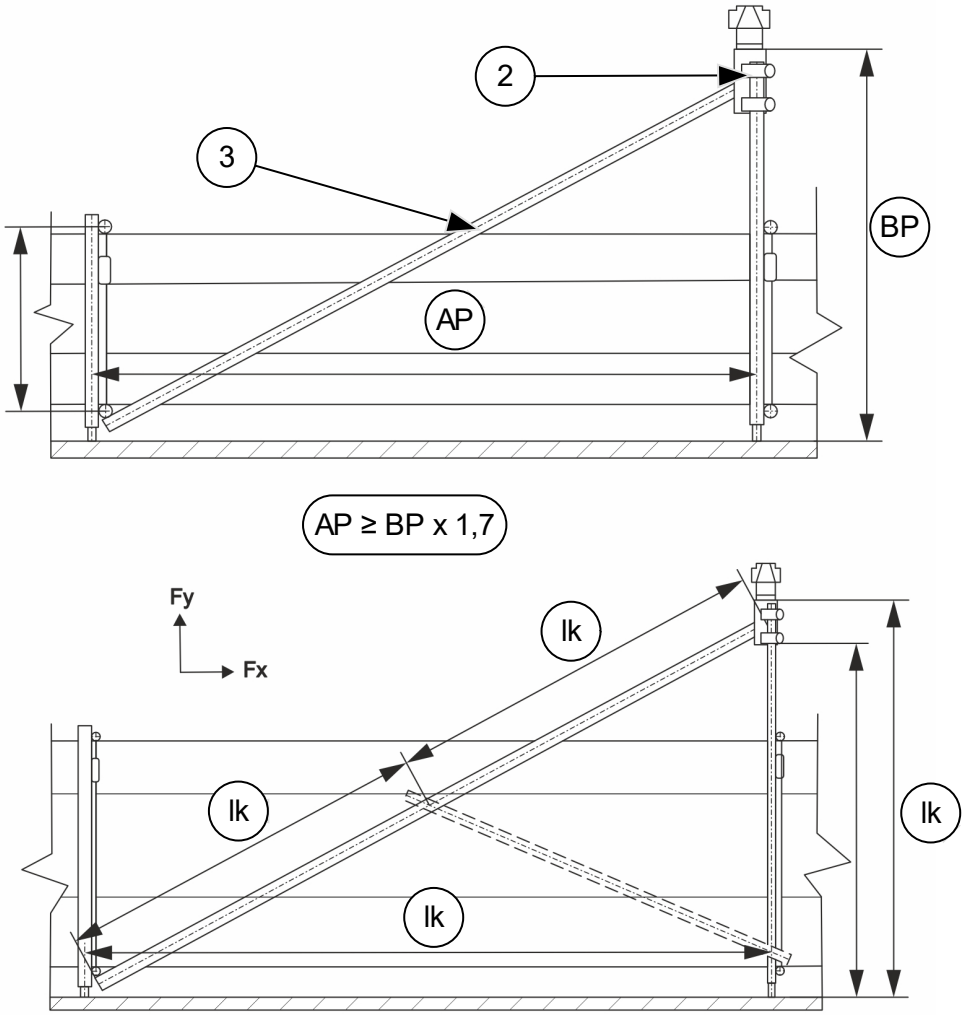


Fig. 15: Anchoring to scaffolding

AP 2,50 m BP 1,38 m

The fixing tube and bracing tube are not included in the scope of delivery.

5.6.2 Installing the mast elements

Inspection before mast assembly

Raise the empty load platform (manual control) and check if

- the proximity switch shuts the unit down at the end of the mast.
- the last (platform side) lowered mast fixing device actuates the emergency stop limit switch.

The assembly engineers ascend in the platform. Operation may only be carried out using the assembly control.

Opening the fall protection

➢ Push the lever (3) forwards and open the fall protection.

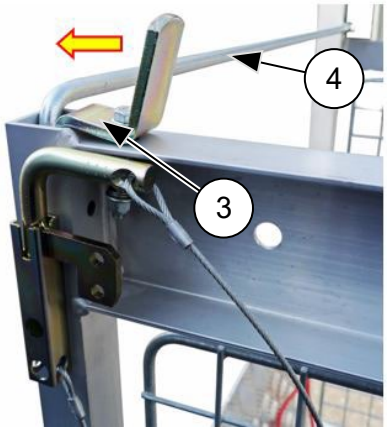


Fig. 16: Opening the fall protection

Opening

➢ Unlatch the loading ramp (1) on the interlock hook (2) and lower the ramp.

✓ The platform can now be loaded/unloaded.

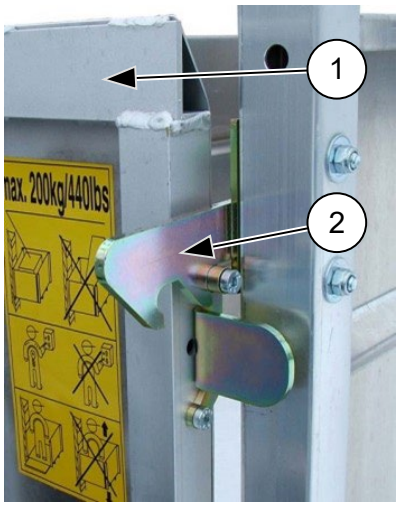


Fig. 17: Opening the loading ramp

Loading and closing the platform

➢ Load the platform with mast sections, parts for the mast bracket and tools (note the max. load capacity!).

➢ Close the ramp of the platform from the inside.

→ Ensure that the interlock hook is fully engaged.

➢ Close the access to the barrier / base enclosure.

Close the ramp or open assembly guard if any of these are open. These interrupt the control.

➢ Push key into the key switch on the sliding carriage switch cabinet (5) and turn to the right (assembly position).

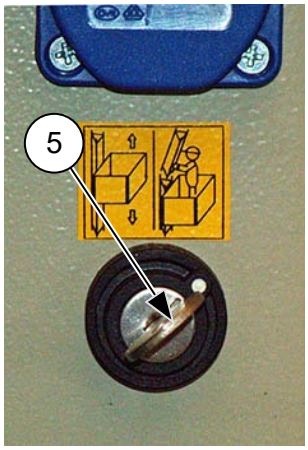


Fig. 18: Key switch in assembly position

⚠ WARNING

Risk of injury

➢ Before the platform ascends, ensure that the base unit is standing securely.

➢ During travel, do not lean out over the side walls of the platform.

➢ Press the **UP**-button (6) assembly control] and ascend in the load platform until the adjustable proximity switch stops the hoist. Then release UP button.

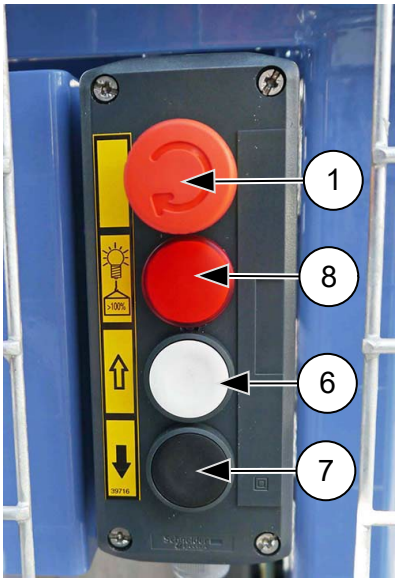


Fig. 19: Assembly control

4. Unhook the assembly guard plate (8) at the top, lower over the assembly control and secure into the bottom shackle.

Fig. 20: Open the assembly guard plate

- ➢ Place the first mast element (10) onto the base mast (9) by hand.
- ➢ Raise the three eyebolts (11A) and fully tighten.
  - ⓘ Tightening torque approx. **90 Nm**

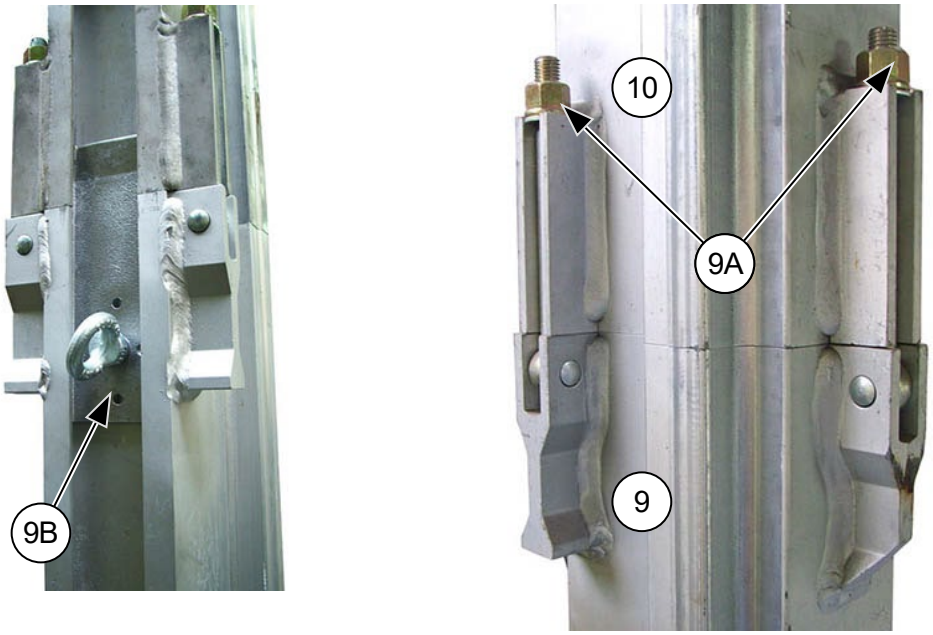


Fig. 21: Place the first mast element onto the base mast

The adjustable connecting plate (9B) of the base mast must be pushed up and secured with the eye bolt.

- ➢ Push the assembly guard plate (8) up and hook into place.
- ➢ Press the **UP** button and ascend until the proximity switch stops the load platform.
- ➢ Unhook the assembly guard plate at the top and lower over the assembly control.
- ➢ Place the second mast element by hand onto the mast and screw down, as described previously.

While assembling the mast, the projecting mast may be moved out over the last mast bracket by a max. of 3 m (with a max. of 300 kg in weight)! (Upper edge of sliding carriage to the mast fastening point.)

Maintain vertical distances for: Mast anchors max. 4 m. / Trailing cable guides approx. 8/4 m.

Check trailing cable length!

- ➢ In order to mount the mast anchors, ascend as far as necessary for these to be mounted easily.
- ➢ Mount the second mast bracket at a height of approx. 4 m, as described previously.
- ➢ Slide up and hook the assembly guard plate into place.
- ➢ Press the **UP** button and ascend until the proximity switch stops the load platform.
- ➢ Mount further mast sections as described previously.

- ➢ Install other mast anchors as described previously.
- ➢ Mount trailing cable guides at distances of approx. 8 m (refer to chapter 5.6.3 Trailing cable guides, page 53).
- ➢ Assemble the hoist until the desired height is reached (max. 50 m with 230 V drive or 100 m with a 400 V drive).

⚠ CAUTION	
	**Increased wear** To avoid damage to the gear rack, the gear racks also need to be lubricated - for the initial lubrication, - when installing new mast sections or - when installing higher superstructures during assembly. Manually lubricate/relubricate the gear racks.

5.6.3 Trailing cable guides

Trailing cable guides must be installed to ensure that the trailing cable runs freely into the cable bin.

Trailing cable guides must be assembled in conjunction with the expected wind speeds. The more sensitive the hoist location is to wind forces, the shorter the distances should be between the trailing cable guides.

Assembly

- ➢ Assemble cable guides (1) onto the fixing tube (2) of the mast anchor.

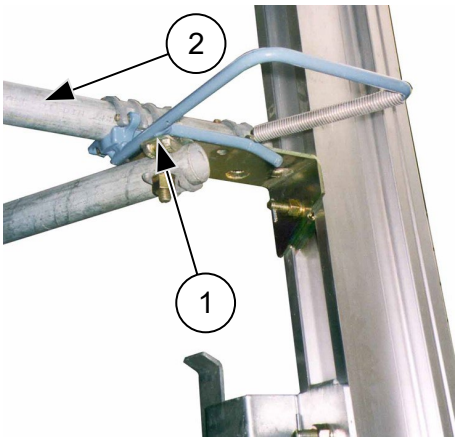


Fig. 22: Assemble cable guides

Recommended distance to each other: max. 8 m

5.7 Stop bars

5.7.1 EMERGENCY-LIMIT stop bar

An **EMERGENCY-LIMIT stop bar** has to be installed at the top stopping point, before the drive pinion exits the gear rack.

Installation

The limit switch tag must point to the motor side.

- Insert the stop bar into the groove of the mast, turn at the pin (2) and tighten the nut.

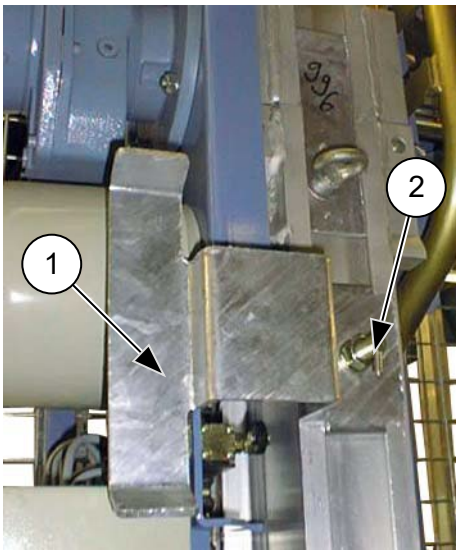


Fig. 23: Installing the EMERGENCY LIMIT stop bar

The stop bar is continuously adjustable.

The stop bar can also be installed under the trolley to adjust e.g. the lower stop point for lorry loading.

The hoist is stopped at this stop bar by the UP or DOWN limit switch.

⚠ DANGER

Danger to life if the mast breaks and the platform falls!

- During operation, the **mast** must not be moved above the topmost anchoring point by **more than 3 m**.
- The stop bar for the emergency limit switch must be set appropriately low!
- **Distance between stop bar and mast end > one metre**

5.7.2 LANDING LEVEL stop bar

A **LANDING LEVEL stop bar** can be installed at each stop position, so that the platform stops at the same level as the landing level safety gate.

Installation

The limit switch tag must point to the motor side.

- Insert the landing level stop bar into the mast groove and adjust **to 0.60 m** – from the landing level floor to the contact plate of the stop bar.
- Turn the pin (2) and tighten with the nut.

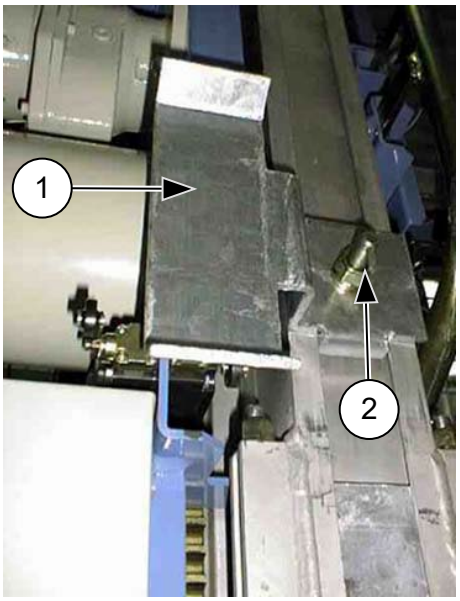


Fig. 24: Installing the landing level stop bar

The stop bar is continuously adjustable.

5.8 Special features when using as a scaffold hoist

The overrun protection (proximity switch) shuts down the ascend function during assembly.

It can be minimally adjusted in height to match the scaffold level with the load platform floor.

Since the scaffold heights and mast elements always jump by 2.00 m, the proximity switch (1) does not need to be adjusted any more for further assembly work.

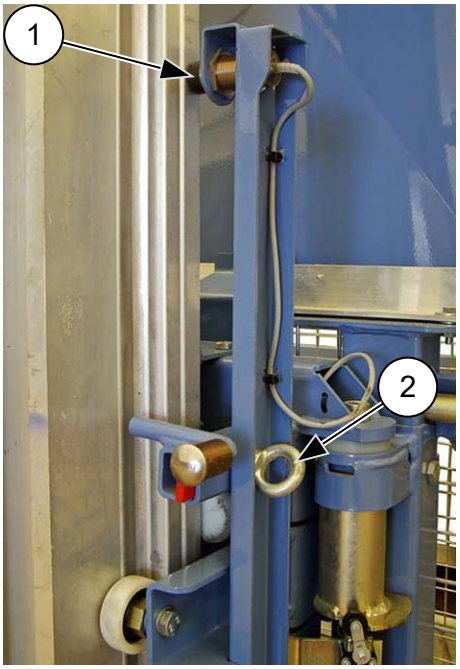


Fig. 25: Proximity switch on the overrun protection

After scaffold construction work, the base unit is no longer required for use as a scaffold hoist.

For this reason, the base unit with base mast can be dismantled and installed for scaffold erection at another construction site.

The mast sections above the base unit can remain at the first site until the scaffold is taken down.

This requires the following steps:

1. Run the load platform down to the DOWN limit switch.
2. Unplug the mains plug and store the mains cable..
3. Remove the pegs from the foot section.
4. Dismantle the mast anchor at the base mast.

5. At the impact point between foot section and base mast (2) and the first attached mast section (3), release the eye bolt (4) and push the connecting plate (5) down.
6. Loosen the three eye bolts (6) and open.

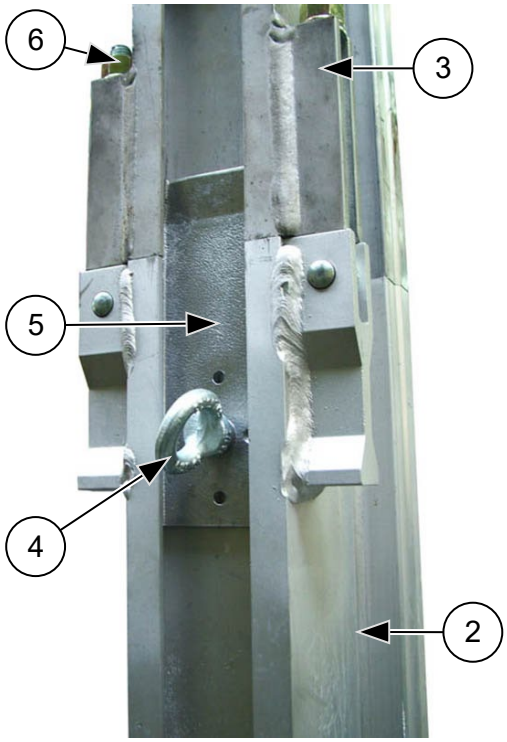


Fig. 26: Using as a scaffold hoist

7. Support mast at the bottom mast bracket with a sheeting support.
   ⓘ Attach the sheeting support as close as possible to the mast.
8. Pull the base unit forwards and transport away.

5.9 Securing loading and unloading points

To prevent persons from falling, fall protection must be installed at **all** loading and unloading points where there is a risk of falling from a height of more than 2 m.

Landing level safety gates protect persons against falling at the stop position when the platform is not at the stop position.

Landing level safety gates must ensure a safe transition to the platform.

Assembly is described in the respective Assembly Manual for the landing level safety gate.

5.10 Check after assembly and before each operation

Check the GEDA 300 Z according to national regulations after assembly and before initial commissioning, as well as after each assembly at a new construction site or any other new site.

Check to ensure that

- The specified maintenance work and inspection procedures has been carried out.
- The gear rack is adequately greased.
- There is no oil leaking from the gear motor.
- The supply cable features an adequate cross section.
- The motor rotation direction corresponds to the **UP** and **DOWN** buttons of the control locations and that the **EMERGENCY STOP** buttons interrupt travel.
- All safety covers and safety devices are fitted and functioning.
- The length of the trailing cable is sufficient for the erection height.
- All connections are correctly made.
- No tools or other parts remain inside or on the machine.
- No tools or other parts are located in the travel path of the machine.
- All warning and information signs are present, easily visible and legible (refer to Appendix in the Maintenance Manual)
- There must be no sign of damage to the trailing cable, mains supply line and control lines.
- All required mast connections and mast brackets have been installed on the mast correctly on site.
- All mast connection bolts have been tightened (90 Nm).
- All required trailing cable guides have been carefully installed and aligned.
- The stop bar for the UP limit switch interrupts ascent at the top stop position.
- The hazard area at the bottom loading point is cordoned off, except for the access to the load handling device.
- Check that the manual control (ground control) and the electric module (if installed) at the landing level safety gate are functioning correctly.
- Test the function of the safety gear by conducting a drop test with an empty platform (refer to chapter 9.6.2 Inspecting the safety gear, page 101).
- The key for assembly control has been removed.

6 Operation

The 300 Z may only be operated by a qualified person appointed by the operating company. This person must be familiar with the operating manual, have sufficient experience and be informed about the risks involved in handling lifting gear.

(refer to chapter 1.7 Intended use, page 16)

6.1 Safety during operation

Transporting persons is prohibited!

It is permitted to ride on the platform to carry out assembly and maintenance tasks.

- Safety instructions (refer to chapter 2 General safety information, page 18) also have to be observed.
- Load the platform as centrally as possible, observe the load capacity of the machine.
  - The platform must always be loaded in such a way that the access for loading and unloading is kept clear.
  - Position the load carefully on the platform.
  - Material that might slip or is higher than the platform itself, or which could fall over, must be secured (also consider the possibility of sudden gusts of wind).
  - Do not transport bulky goods that project over the side of the platform.
- Do not stand or work underneath the platform!
- Do not place objects under the platform.
  - Store material at a safe distance of min. 50 cm (20") from moving parts of the machine.
- Landing level safety gates may only be unlocked and opened when the platform is turned and when using the key secured to the gate.
- If the loaded platform stops during operation due to a malfunction, it is the responsibility of the operator to recover the load. - Never leave a loaded platform unattended!
- The material hoist must be operated from outside the hazard area.
- The operator must always be able to monitor the platform.
- Stop operation in the following situations:
  - at temperatures below -20 °C and above +40 °C.
  - in the event of damage or other malfunctions
  - if recurring tests/intermediate tests have not been carried out, (refer to chapter 9.3 Inspections, page 88)
  - Wind speeds are over 72 km/h (20 m/sec.) (Wind force 7-8 according to the Beaufort scale)

6.2 Commissioning

1 Main switch

2 Control light, ready for operation

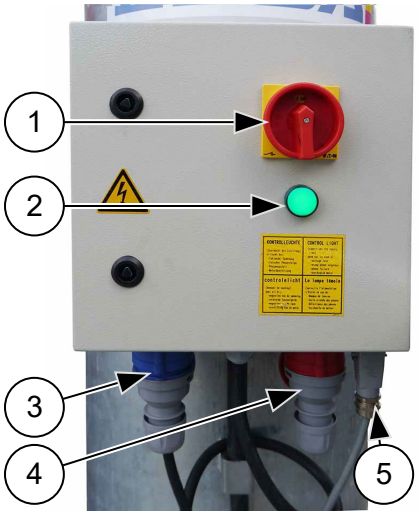


Fig. 27: Ground station switch box

3 Socket [blue] for ground control/manual control

4 Socket [red] for electric module on the landing level doors (or dummy plug during assembly)

➢ Turn the main switch to the "I" position [ON] .

Activating the operating controls

➢ Turn the key switch (5) on the assembly control to the left (operating position) and remove the key.

✓ The ground control/manual control and (if fitted) the electric modules on the landing level safety gates are activated.

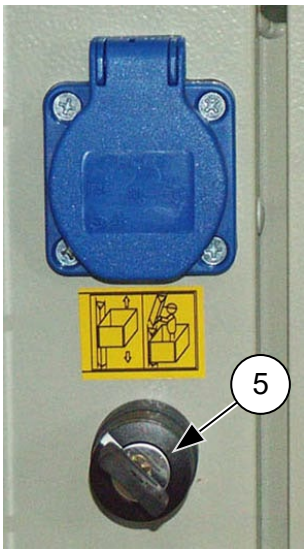


Fig. 28: Activating the operating controls

The key has to be removed to prevent incorrect operation during operation.

6.2.1 Safety check before starting work

Perform a test run with an **empty** platform and check that the entire travel path of the platform is clear.

The platform must immediately stop when

- an **EMERGENCY STOP** button is pressed.
- the **UP** limit switch is triggered.
- the **DOWN** limit switch is triggered.
- the **EMERGENCY** limit switch is triggered.
- the trolley has reached the end of the mast
- the OFF button on the electric module of the landing level safety gate (if there is one) is pressed.

The platform must not start if

- it is overloaded (red control light illuminates).
- the ramp is open.
- the platform has been swivelled to the landing level safety gate for loading or unloading.
- the safety gear has been triggered.

The platform must not continue automatically if

- the selector switch on the manual control console is set to "**I**" (manual).
- the platform is located near the ground (approx. 2 m), irrespective of the selector switch position.

Alarm signal function test

- The platform must emit a warning tone in both travel directions when it is close to the ground (approx. 2 m).

When operating the platform as a material hoist close to the ground (approx. 2 m), it must not be possible to operate it from the landing level safety gate.

6.3 Operation/function

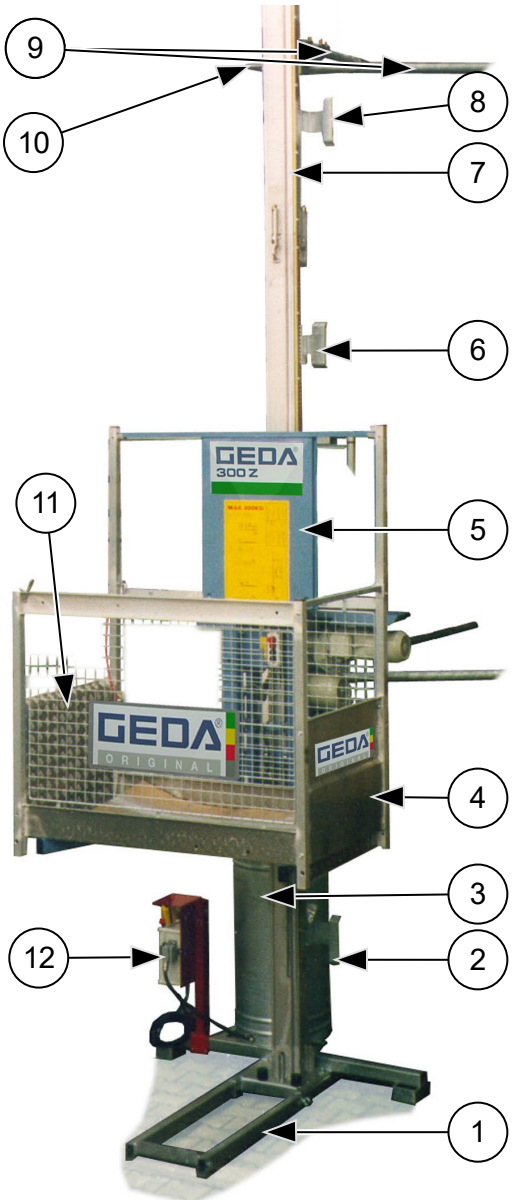


Fig. 29: Overview 1

1	Foot section with base mast	7	Mast section 2 m (1 m)
2	Stop bar lowest stop position	8	Stop bar for UP-END limit switch
3	Cable bin	9	Anchoring tubes
4	Load platform	10	Trailing cable guide
5	Assembly guard plate	11	Platform access (ramp)
6	Landing level stop bar	12	Switch cabinet with main switch

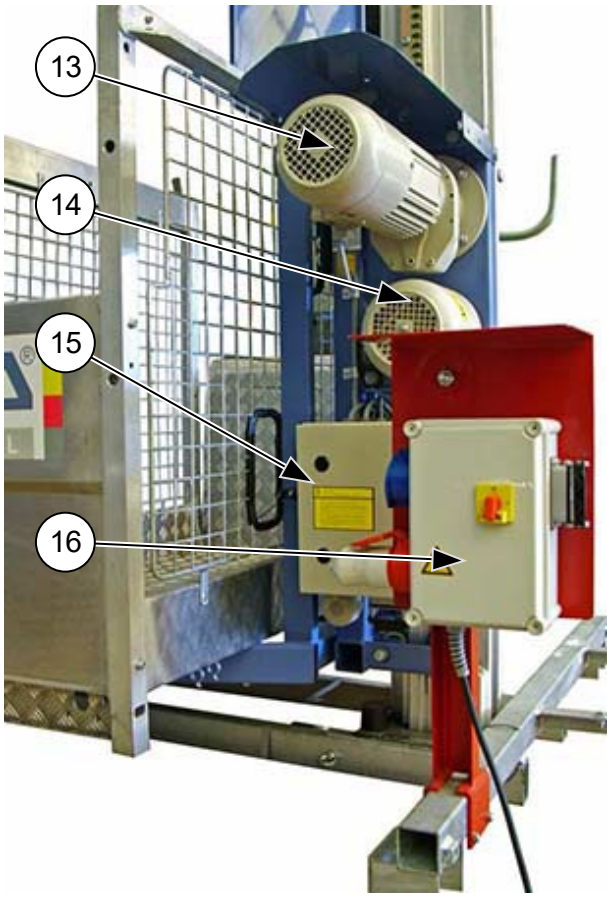


Fig. 30: Overview 2

13	Drive motor	15	Switch box on trolley
14	Safety gear	16	Switch cabinet with main switch

6.3.1 Functional description

- The base unit can be extended with 0.7 m, 1.0 m and 2.0 m long mast sections up to a max. installed height of 50 m (230 V) / 100 m (400 V).
- After the main switch has been switched on, the green control light on the ground station switch box signals readiness for operation.
- The platform is controlled with the ground control outside of the hazard area or with the electric modules of the landing level safety gates above the lower safety area.
  The ground control is a mobile manual control plugged into the switch box of the foot section.
  For installation, the manual control must be fitted with a special extension lead for this manual control.
- Downward travel of the platform is limited by a **DOWN** limit switch and upward travel by an **UP** limit switch. If one of these limit switches is overrun due to a fault, the **EMERGENCY LIMIT** switch interrupts the **EMERGENCY STOP** safety circuit.
- The platform openings (ramp and assembly guard) are electrically monitored and interrupt the safety circuit when opened so that the platform stops immediately or does not start moving.
- The machine is fitted with an overload detection device. When the load capacity is exceeded, this device stops travel in both directions, the red control light on the trolley switch box lights up and a warning signal sounds.
- The lifting speed of the platform is approx. 24 m/min.
- The key switch on the trolley switch box is used to change from assembly control in the platform (key inserted) to external control (key removed).
- The turned platform interrupts the safety circuit. The hoist is unable to start with the platform pivoted.
- The bottom 2 m are secured separately.
  - Travel is only possible using the dead man’s control.
  - A warning sound is emitted during **UP and DOWN travel**.
  - In this zone, the hoist cannot be operated from the landing level control.
- Automatic travel is possible above the 2-m safety area.
- Complete installation of the construction hoist also includes the safety devices for the loading and unloading points. (refer to chapter 5.9 Securing loading and unloading points, page 57)
- The hazard area, excluding the access point to the platform, must be cordoned off and identified.

Use as a scaffold hoist

A specific use of the hoist is for scaffold assembly, the scaffold and hoist are installed alternately (hoist and scaffolding are in assembly state).

- A mobile ground control is used for operation or only the assembly control in the platform is used during assembly.
- Following scaffolding work, dismantle the hoist or equip it for further operation (install landing level safety gates).

6.3.2 Platform access ramp

Opening

➢ Unlatch the loading ramp (1) on the interlock hook (2) and lower the ramp.

✓ The platform can now be loaded/unloaded.

Closing

➢ Swivel up the ramp and press it against the platform until the interlock hook engages twice.

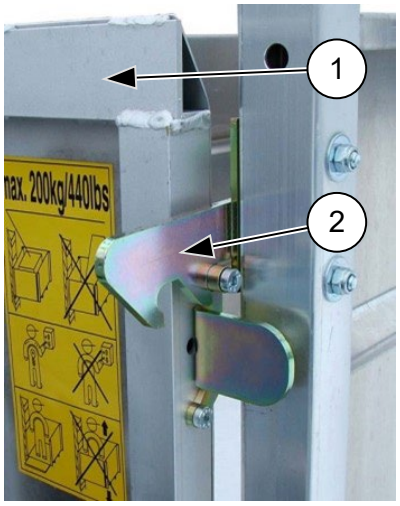


Fig. 31: Opening/closing the loading ramp

6.3.3 Securing the lowest stop position (ground station)

The lowest stop position must be secured and marked to prevent unauthorized access.

⚠ DANGER

Danger to life from lowering platform

- ➢ Never remain inside the cordoned-off area during operation.
- ➢ Turn off the main switch and secure it against being switched on while work is being carried out inside the cordoned-off area. Secure the platform if necessary (mast clamp).

⚠ WARNING

Risk of injury from colliding with objects

- ➢ The operator always has to check whether the travel path and the area underneath the platform is clear!

⚠ WARNING

Risk of injury

- ➢ The distance of the cordon to moving hoist parts must be min. 0.5 m and max. 2.0 m.

6.3.3.1 Cordon

The ground station can be secured with a cordon (e.g. red-and-white chain)!

Height = approx. 1.10 m

Distance to moving hoist parts = min. 0.5 m / max. 2.0 m

6.3.4 Controls for normal operation

6.3.4.1 Ground control/manual control

The platform can be summoned to the ground station from higher stop positions or moved up to a landing level using the ground control.

The platform must be turned towards the trolley and engaged. The ramp must be closed and the assembly guard plate must be secured at the top.

Selector switch (13) to "I" position (dead man's control/MANUAL)

Ground control/manual control

1 **EMERGENCY stop** button
3 **UP** button
4 **DOWN** button
1 **Selector switch** MANUAL (I) -
3 AUTOMATIC (II)

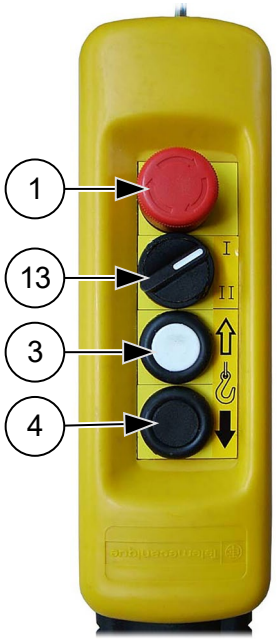


Fig. 32: Ground control/manual control (position I)

Travelling UP

➢ Press and hold the **UP** button (3).
  ✓ The platform only moves while the **UP** button (3) is pressed. The platform runs over the **LANDING LEVEL stop rail** and is stopped by the **UP** limit switch.

Travelling DOWN

➢ Press and hold the **DOWN** button (4).
  ✓ The platform moves only while the **DOWN** button (4) is pressed and stops at the **DOWN** limit switch .

⚠ WARNING

Risk of injury from platform moving downwards

➢ Ensure that the downward travel path is clear.
➢ Only then can downward travel be continued.

Selector switch (13) to "II" position (automatic travel)

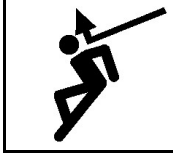
Travelling UP

- Press and hold the **UP** button (3).
  - → The platform moves in the lower safety area only while the **UP** button (3) is pressed.
- After exceeding this safety area, release the **UP** button (3).
  - ✓ The platform automatically travels onward to the next landing level and stops there.
- For continuous travel to the second landing level, press the **UP** button (3) until the landing level stop rail for the first landing level has been passed.

Travelling DOWN

- Press and release the **DOWN** button (4).
  - → The platform travels downwards and stops before the lower safety area.

⚠ WARNING



Risk of injury from platform moving downwards

- Ensure that the downward travel path is clear.
- Only then can downward travel be continued.

- Hold down the **DOWN** button (4) or press it again.
  - ✓ The platform starts moving and stops at the **DOWN** limit switch.

6.3.5 Assembly control/maintenance control

The platform must be turned towards the trolley and engaged. The ramp must be closed and the assembly guard plate must be secured at the top.

For installation or maintenance, the platform can only be controlled with the dead man's control. The platform only moves while the operating button is pressed.

Startup for assembly/maintenance

- Turn the main switch (on the ground station switch box) to the "I" position (ON).
  - → The green control light on this switch box lights up as confirmation.
- Turn the key switch (5) on the trolley switch box to the assembly position.
  - → The key cannot be removed in this position.

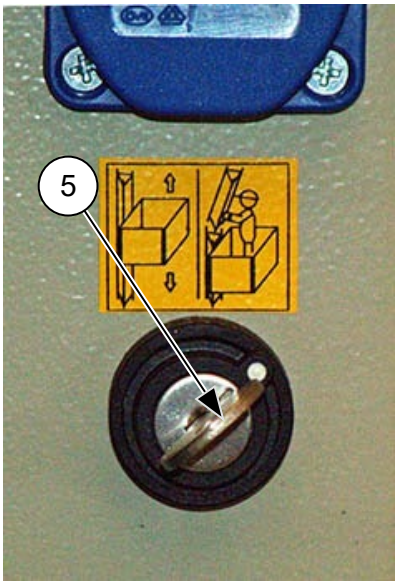


Fig. 33: Activating the assembly control

✓ The control in the platform for assembly or maintenance is active.

1 **EMERGENCY STOP** button
6 **UP** button
7 **DOWN** button
8 Overload **control lamp**

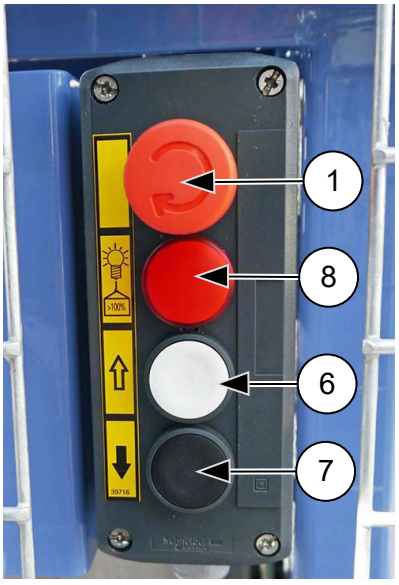


Fig. 34: Overview assembly control

Travelling UP

- Press and hold the **UP** button (6).
  - ✓ The platform moves only while **UP** button is pressed and is stopped at the mast end by the overrun protection.

Travelling DOWN

➢ Press and hold the **DOWN** button (7).

✓ The platform moves only while the **DOWN** button is pressed and stops at the **DOWN** limit switch .

⚠ WARNING	
	**Risk of injury from platform moving downwards** ➢ Ensure that the downward travel path is clear. ➢ Only then can downward travel be continued.

6.3.6 Swivelling the platform

For loading and unloading, the platform has to be swivelled by 90° towards the scaffolding/building.

Swivelling the platform out

➢ Turn the swivel lever (2) down and swivel out the platform (1) towards the landing level safety gate until the swivel lever engages again.

✓ The platform can now be loaded/unloaded.

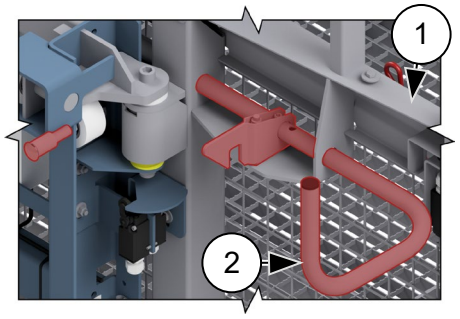


Fig. 35: Swivel lever

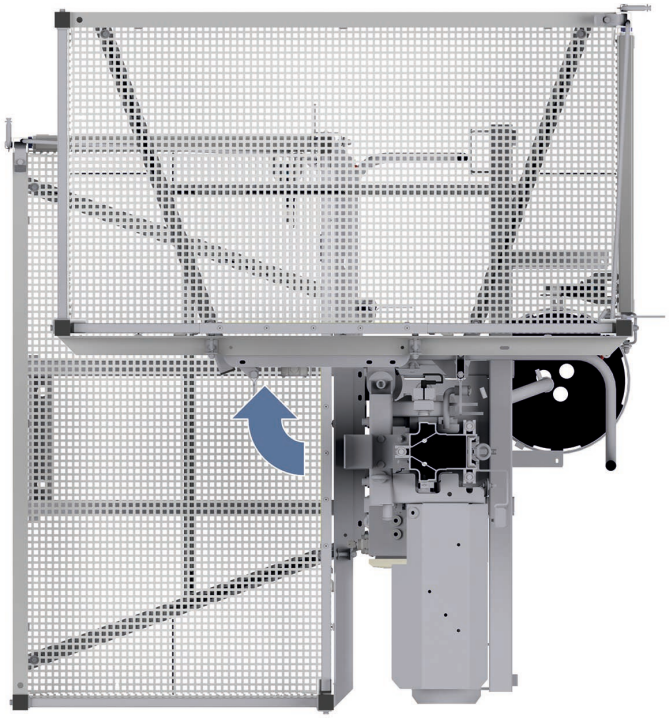


Fig. 36: Swivelling the platform

The control function is interrupted when the platform is swivelled out!

Swivelling the platform in

➢ Pull the swivel lever (2) up and swivel the platform towards the trolley until the swivel lever engages again.

✓ The platform can now be moved up or down.

The platform can only be swivelled towards the trolley if the landing level safety gate is closed and locked and the key has been removed!

6.3.7 Securing loading and unloading points

To prevent persons from falling, fall protection must be installed at **all** loading and unloading points where there is a risk of falling from a height of more than 2 m.

Landing level safety gates protect persons against falling at the stop position when the platform is not at the stop position.

Landing level safety gates must ensure a safe transition to the platform.

Assembly is described in the respective Assembly Manual for the landing level safety gate.

Assembly and operation of the electric module is described in the assembly manual for the landing level safety gate.

6.3.7.1 Landing level safety gate ECO

➢ Swivel the load platform towards the landing level safety gate.

Open the landing level safety gate

➢ Remove the key (1) from the holder (1A) on the platform.

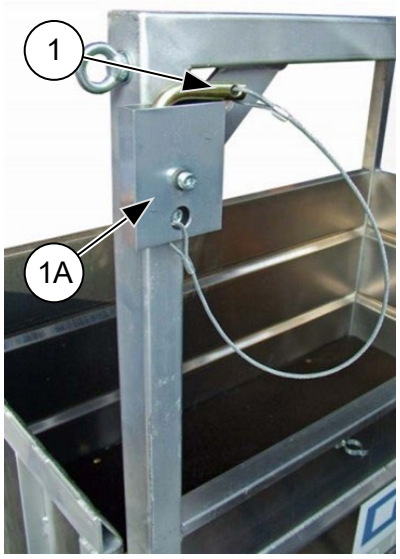


Fig. 37: Key for the landing level safety gate

➢ Insert the key (1) into the lock on the landing level safety gate (2).

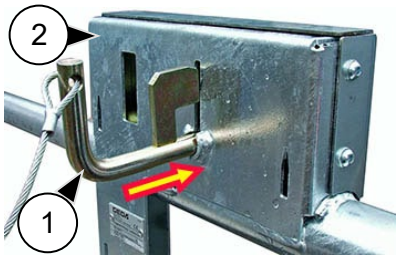


Fig. 38: Inserting the key into the lock

- ➢ Turn the key (1) to the right to unlock the sliding door (2A).
- ➢ Push open the sliding door (2A).

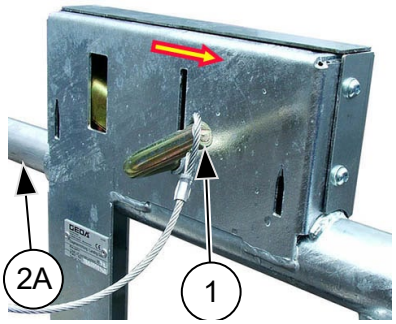


Fig. 39: Unlocking the landing level safety gate

- ➢ Open the ramp of the platform.
  - ✓ The platform can be loaded/unloaded.

The key is connected to the platform with a wire rope and bag so that the platform can only be swivelled towards the trolley with the key removed.
This key can only be removed when the sliding door is closed and locked.
Do not alter or remove the wire rope!

- ➢ Close the ramp of the platform.

Closing the landing level safety gate

- ➢ Push the sliding door (2A) closed until it engages in the lock with key.
- ➢ Turn the key (1) to the left to lock the sliding door.
- ➢ Remove the key (1) from the lock and insert it into the holder (1A) on the platform.
- ➢ Swivel the platform inwards.
  - ✓ The platform can be moved to the next landing level or to the ground station.

6.3.8 Landing level module

The landing level module must be installed on the landing level safety gates if local regulations specify electrical monitoring of the landing level safety gate or control from an upper stop position is required.

Using the electric module, the platform can only be moved to above the 2 m safety area.

3 **UP** button

4 **DOWN** button

1 **STOP** button (does not latch)
4

Additional equipment:
Extension cable 20 m

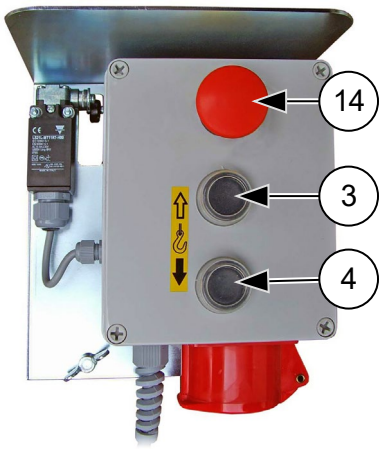


Fig. 40: Electric module for landing level safety gate

Operation depends on the position of the selector switch on the manual control (13) and is identical to operation of the ground controls.

6.3.9 Overload indication

The material hoist is equipped with an overload warning device that prevents the platform from starting when it is overloaded.

If the platform is overloaded, a red control light on the trolley switch box (8) lights up.

An alarm signal also sounds.

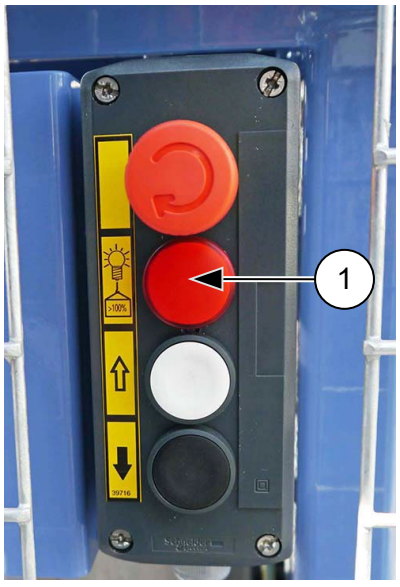


Fig. 41: Overload indicator

6.3.10 Emergency shutdown

In situations that present a risk to operating personnel or the machine, the machine can be shut down by pressing an EMERGENCY STOP button.

An EMERGENCY STOP button is located at each control point.

Fig. 42: EMERGENCY STOP button

EMERGENCY STOP slam buttons are equipped with a latching mechanism and remain active until they are manually unlocked again (turn red button to the right and pull it out).

A stop button is located on the electric modules for the landing level safety gates and can be used to stop travel from each landing level. This stop button does not engage which means that further travel is immediately possible after the stop command.

6.3.11 Interrupting work – end of work

Switch off and secure the machine when interrupting work and at the end of work.

- ➢ Move the load platform downwards until it stops at the DOWN limit switch.

If there is a risk of frost, move the load platform up a little so that the DOWN limit switch is clear.

- ➢ Unload the platform.
- ➢ Remove the key from the key switch on the platform control.
- ➢ Turn off the main switch (position "0" [OFF]) and secure with a padlock.
- ➢ Disconnect the mains plug.

Fig. 43: Main switch secured

7 Equipment

7.1 Standard push-in frame for the platform

Transported items (e.g. scaffolding tubes) which are higher than the platform can be secured against falling over during transport with this device.

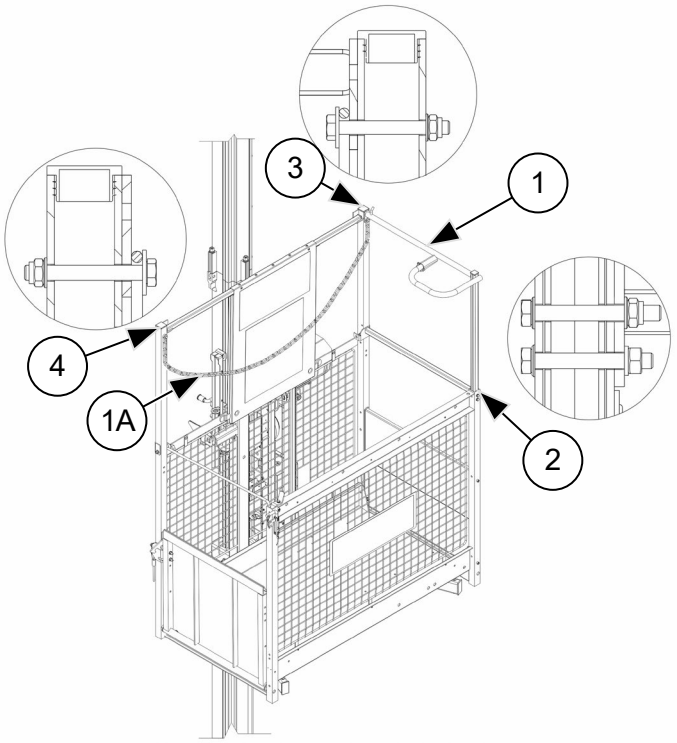


Fig. 44: Push-in frame for scaffolding parts

Tools required:	2 ring or open-jaw spanners - width across flats 13/17
	1 screwdriver

Installation

1. Remove the plastic cap from the corner post (2).
2. Remove the screws on the cross connections and place the push-in frame (1) into this corner post.
3. Use the previously removed fasteners to attach the post of the push-in frame.
4. Use the hex screw M 8 x 55, washer and nut supplied to attach the push-in frame at the top of the corner post (3).
5. Remove the plastic cap from the left corner post (4) and install the chain (1A) with the supplied screw M 8 x 25, washer and M8 nut in the provided hole (diam. 9 mm) (place the large washer underneath the hex screw).
6. Guide the chain to the corner post (4) and attach to the push-in frame there.
7. Insert the plastic cap into the corner post again.

7.2 Special push-on frames

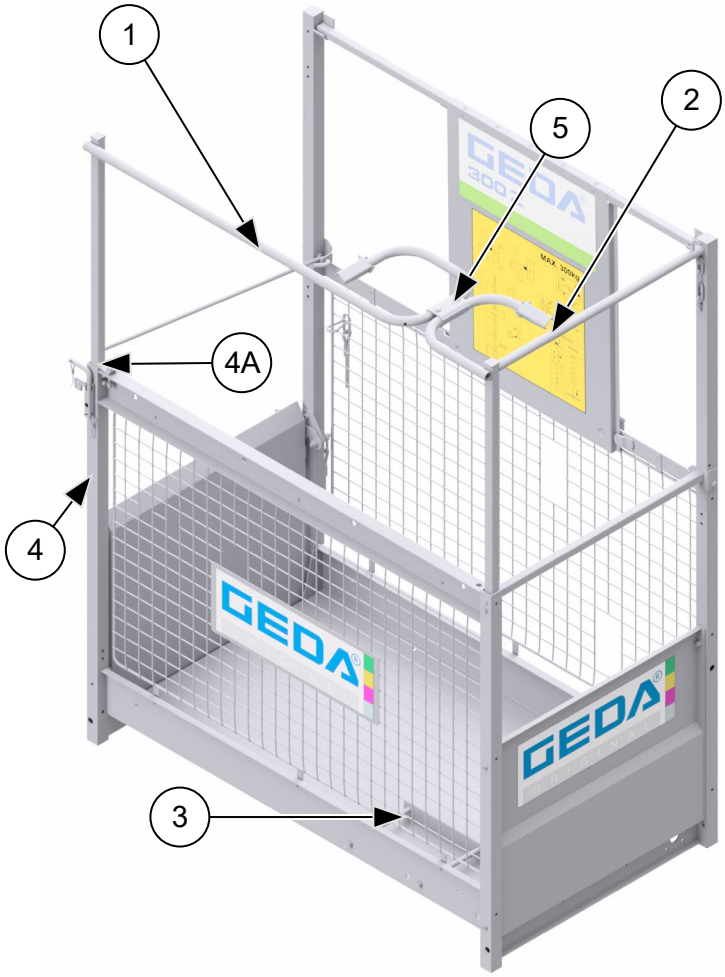


Fig. 45: Special push-on frames for scaffold components

1 / 2 Special push-on frames for safe transport of scaffold components

3 Pipe bracket

Tools required:	2 ring or open-jaw spanners - width across flats 13/17
	1 screwdriver
Tools required:	2 ring or open-jaw spanners - width across flats 13/17
	1 screwdriver

Assembly for platform with ramp

1. Assemble the lateral push-on frame (refer to chapter 7.1 Standard push-in frame for the platform, page 76)

2. Dismantle the fall protection lever (7) on the right-hand corner strut (4).
   → screw M 8 with compression spring

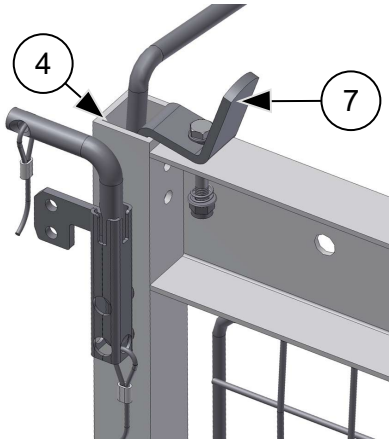


Fig. 46: Assembly for load platform with ramp 1

3. Drill the existing borehole (M 8) to a diameter of 16 mm to hang the fall protection from.
4. Hook in the fall protection (8).

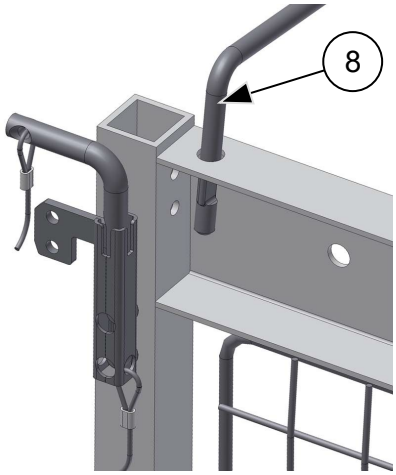


Fig. 47: Assembly for load platform with ramp 2

5. Insert the special push-on frame part (1) into the front corner strut (4) and screw down using the two hex screws M 8x55, washers and nuts supplied (boreholes are provided).

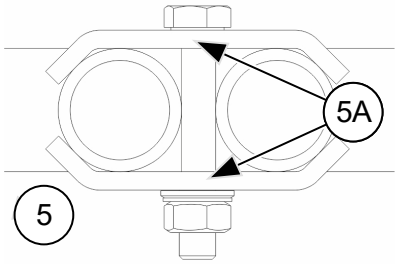


Fig. 48: Assembly for load platform with ramp 3

6. Screw down the special push-on frame part (1+2) using two cups (5A) and two hex screws M 8x50, washers and nuts.

Assembly for load platform with door

1. Assemble the lateral push-on frame (refer to chapter 7.1 Standard push-in frame for the platform, page 76)
2. Remove the plastic cap from the corner strut (4).
3. Remove the top door hinge screws (4A) on the corner strut (4).
4. Insert special push-on frame (1) into this corner strut, screw down with hinge and with the two available hex screws, washers and nuts.
5. Screw down the special push-on frame part (1+2) using two cups (5A) and two hex screws M 8x50, washers and nuts.

Assembling the pipe bracket

1. Insert both pipe bracket circular rods into the boreholes Ø 16 mm on the front of the base plate of the load platform.
2. Screw down the bracket part of the pipe bracket using two hex screws M 8 x 20, washers and nuts (3A).

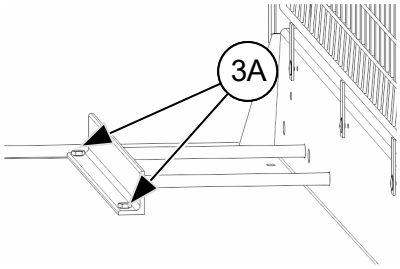


Fig. 49: Assembling the pipe bracket

7.3 Overrun protection

Before the drive pinion moves out of the gear rack (e.g. during assembly), the proximity switch switches off.

The proximity switch can be minimally adjusted in height to set the stopping point of the load platform to the level of the stop position (scaffold level).

1. Position the load platform at the stop position.
2. Open ring nut (2) and push the bracket with proximity switch (1) vertically to the end of the mast and screw tight again.

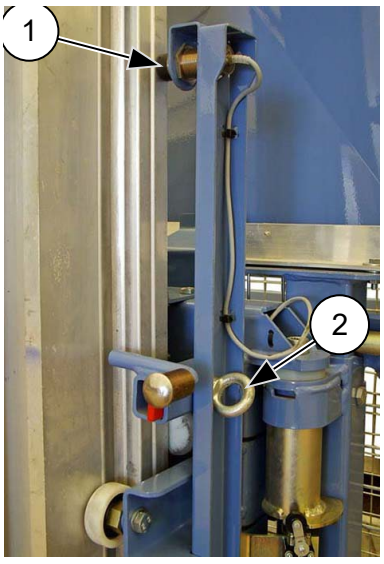


Fig. 50: Overrun protection

8 Accessories

8.1 Spindle

Spindle for easy alignment of the base unit.

Spindles can be installed on the foot section.

Fig. 51: Aligning the base unit with spindles

8.2 Manoeuvrable bogie

The transport frame facilitates manoeuvring at the construction site or storage area if no crane or forklift is available.

Assembling the transport frame

1. Insert the transport wheels (1) into both platform corner posts on the frame and secure them by engaging the lever (1A).
2. Remove the brake release lever from the mount (refer to chapter 9.6.2 Inspecting the safety gear, page 101) and insert it into the brake release thread.

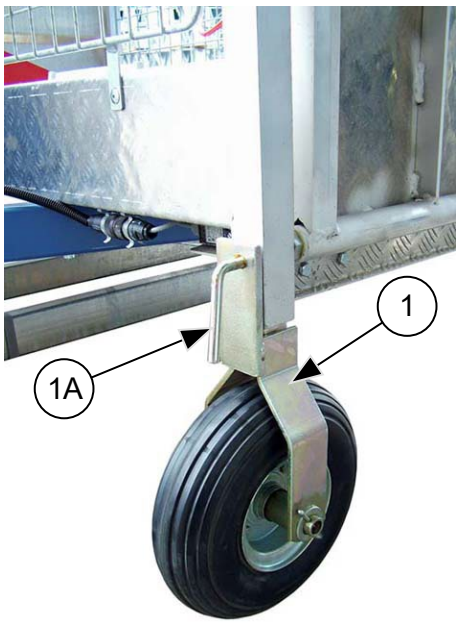


Fig. 52: Transport frame

3. Use the brake release lever to carefully lower the load platform.
4. While operating the brake release lever, tip the base mast backwards, then release the brake release lever.
   → When the unit is tipped forwards, the base unit will rest on the wheels.
5. After using the lever, place it back in the mount to prevent unauthorised use.

Dismantling the transport frame

1. Move the hoist to the intended installation area and align it.
2. Place load-distributing support elements on the ground under the foot section.
3. Carefully operate the brake release lever on the motor brake (refer to chapter 9.6.2 Inspecting the safety gear, page 101). The foot section extends until it touches the ground.
4. Plug in the mains supply cable, plug in the manual control at the switch cabinet with the main switch and move the load platform up a little.
5. Dismantle both transport wheels on the base unit and store them.

8.3 Operating hours counter

An operating hours counter is installed in the trolley switch box to record the operating hours (motor operating time).

The switch box must be opened to read the counter. The switch box may only be opened by a qualified electrician!

8.4 1.10 m base enclosure with barrier

With use of the base enclosure, the 300 Z meets the safety requirements specified in the standard.

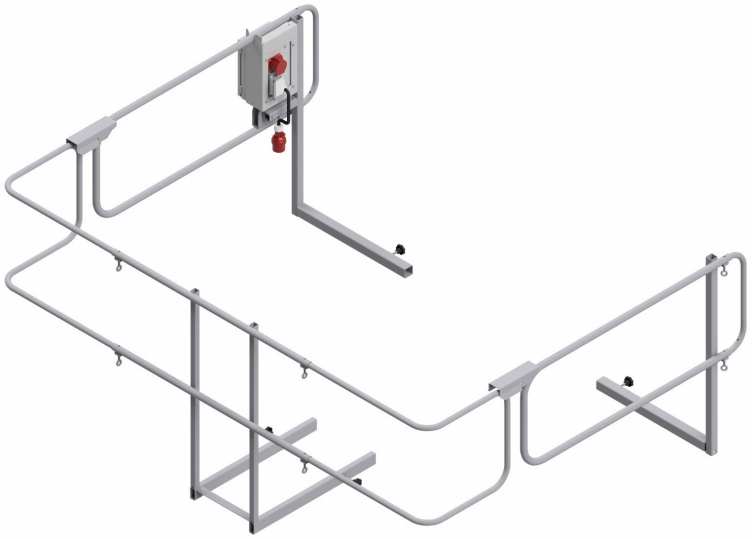


Fig. 53: 1.10 m base enclosure with barrier

Height = 1.10 m

Distance to moving hoist parts = min. 0.5 m / max. 2,0 m

Opening

➢ Raise the barrier.

Closing

➢ Lower the barrier until it rests on the enclosure post.

The platform can be operated only when the barrier of the base enclosure is closed.

The barrier can optionally be installed to open to the left or to the right.

Assembly of the 1.10 m base enclosure with barrier is described in detail in a separate assembly manual.

⚠ WARNING

Risk of injury from impaired view

➢ The operator always has to check whether the travel path to the ground station is clear!

8.5 Underrun protection

The underrun protection can be used as an alternative to the base enclosure. (Corresponds to the same safety level as the 1.10-m base enclosure.)

For platforms with underrun protection, a barrier is sufficient for securing the ground station!

Function:

Protects the platform against damage from hitting obstacles.

⚠ WARNING

Risk of injury from platform moving downwards

- ➢ Never remain inside the cordoned-off area during operation.
- ➢ Turn off the main switch and secure it from being switched on whilst working inside the cordoned-off area.

Protects persons who are underneath the platform without permission. They could be crushed by the platform during downward travel.

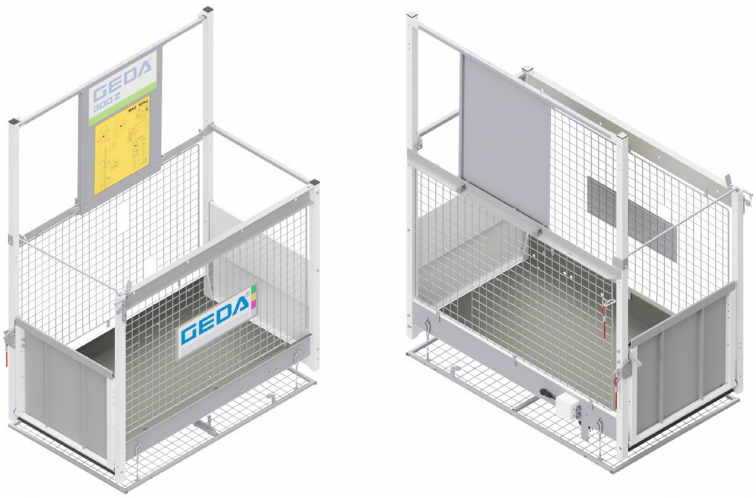


Fig. 54: Underrun protection

8.6 Cable bin cover

For better protection against theft, a cover can be installed on the cable bin for the trailing cable.

Assembly:

Assembly of the cable bin cover is described in separate instructions.

Fig. 55: Cable bin cover

8.7 Single axle trailer

A special single axle trailer is available for road transport.

This single axle trailer can be fitted with a trailer coupling ring for cars or alternatively with a trailer coupling ring for lorries.

Fig. 56: Single axle trailer

Transport using a single-axle trailer is described in the separate operating manual supplied with this trailer.

9 Maintenance - Checking - Cleaning

9.1 Inspection schedule

The inspections to be carried out on a daily basis before the start of operation are not included in the maintenance schedule. These are described in the Operation chapter in the instruction manual as these checks are carried out by the operating personnel.

The maintenance intervals given relate to one-shift operation (40 hours/week).

The intervals are to be modified according to any deviating operating times. The following inspections always include a check for proper function, wear, completeness and that there is no manipulation present.

The operating hours counter is installed in the car control switch box.

Inspection schedule

Abbreviations used in the inspection plan

W = Week / M = Month / Y = Year / R/N = Remarks/Notice

● = visual check / ■ = check	W	1M	3M	6M	1Y	R/N
Electrical components						
Check the trailing cables and control lines for damage.		●				
Abrasion protection for cables			●			
Check the lubricant for the trailing cable			■			
Control devices, switching devices, limit switches and sensors				■		
Function test of the control points (ground station/landing level control)			■			
Move platform to each landing level Stop before the landing level (tolerance ±2 cm)				■		
Strength of the contacts				■		
Check the overload detection setting					■	
Safety of electrical equipment in machinery (PE conductor measurement, insulation measurement, ...)					■[1]	

■[1] = The measurement procedures and inspection intervals for the repeat test have to be carried out in accordance with local and national regulations.

Mechanical components	W	1M	3M	6M	1Y	R/N
Lubricate/check the gear racks and drive pinion	●					
Lubrication device		●				
Check the gear rack and drive pinion for wear	●		■			
Track rollers/guide rollers		■				

Mechanical components	W	1M	3M	6M	1Y	R/N
Platform from below		●				
Cable guides (threaded connections/rubber parts present)			●			
All covers fitted			●			
Motor brake				■		
Motors/gearboxes (oil leak/irregularities)				●		
Mast (threaded connections/deformation/cracks/wear)				■		
Mast brackets (threaded connections/flaking on building)				■		
Check that the gear rack is securely installed					■	
Check braking distance	■					
Information signs present and easily legible			■			
Platform access points	W	1M	3M	6M	1Y	R/N
Interlocks			■			
Joints/hinges/springs			●			
Traction ropes			●			
Landing level doors	W	1M	3M	6M	1Y	R/N
Function/locking device/opening width			■			
emergency equipment	W	1M	3M	6M	1Y	R/N
Buffer on the foot section			■			
Safety gear (■[2]for "Recurring checks")			■		■[2]	
Check the rescue equipment (emergency descent)			■			
EMERGENCY LIMIT stop bar top/bottom			■			
EMERGENCY STOP buttons			■			

Replacement intervals	
Replacing the impact buffers on the foot section	every 3 years
Changing the gearbox oil	For replacement interval (refer to chapter 9.5.4 Motor/motor brake, page 100)
Replacing the safety gear	For replacement intervals refer to the assembly manual for the safety gear.

Supplement the inspection schedule with information regarding maintenance/service/operating equipment/replacement/repair of component parts contained in the instructions provided by suppliers.

9.2 Cleaning

- Risk of fire and explosion as a result of using combustible cleaning materials.
- Only use suitable, non-combustible cleaning materials.
- Label damp areas with the appropriate warning signs.
- Wear personal protective equipment.
- Do not use any abrasive substances for cleaning.
- The protective buffers must not come into contact with acid or alkaline solutions (cleaning materials). Observe the chemical resistance list from the manufacturer.
- To prevent damage due to water ingress or bearing grease being washed out, **electrical and mechanical components must not be cleaned with high-pressure water (e.g. steam cleaner, pressure washer)**.
- Do not touch sockets, cables or electrical components with wet or damp hands.
- Cleaning tasks on live components should only be carried out by qualified electrical personnel.
- Plastic parts and switch boxes must only be cleaned with a damp cloth.
- Regularly remove all grease on motors, the safety gear and other components in the area of the gear rack.

9.3 Inspections

Inspections prior to operation, recurring inspections and intermediate inspections must be carried out according to national regulations.

During inspections, the relevant safety features of the hoist are checked by means of appropriate procedures according to the maintenance schedule or after specific incidents. Appropriate procedures are:

- Visual inspections
- Function and efficiency checks
- Checks using measurement and test equipment

The scope, nature and schedule of each check and the persons authorised to carry out the check must be specified by the employer.

Type of test	Inspection procedures
Checking by a trained person	Basic visual inspection and function check with few test steps and simple evaluation
Checking by a competent person	Checking due to special events/damage, e.g. • Assembly • Maintenance • Natural phenomena
Checking by an accredited inspection body (specialist)	Recurring check for systems / machines that must be monitored. Checking in accordance with national regulations

9.3.1 Documenting the results

The employer must document the results of the checks. The documentation must be retained for a reasonable period of time, but at least for the entire service life of the machine.

- The results of the recurring inspections can be recorded in writing of this manual.
(refer to chapter 14 Documenting the checks, page 119)
- Verification confirming when the last inspection was completed must be attached to the machine.

9.3.2 Checks before initial operation

The following tests have already been carried out at the factory:

- Dynamic test with 1.1x useful load
- Electrical tests according to EN 60204.
- Function tests.

9.3.3 Checks after assembly/daily before starting operation

To ensure safety when handling the hoist, the hoist attendant/person specified by the employer must carry out a daily check of certain areas/parts of the hoist.

Defects detected must be immediately reported to the supervisor and rectified. Defects may only be rectified by trained personnel responsible for maintenance and servicing.

Always carry out visual inspections before function checks. Operation is prohibited until the defects are rectified.

The following points must be checked daily

- Safety check before starting work (refer to the "Operation" chapter in the instruction manual)
- Keep working area around the hoist clear and clean.
- Clean the cable bin and cable trolley (keep free from snow and ice in winter).

For inspections after each installation (refer to chapter 5 Assembly, page 33).

9.3.4 Recurring checks

Recurring inspections must be carried out in accordance with national regulations.

GEDA recommends that you carry out a recurring check at least once a year. In the event of increased use (e.g. multiple shift operation), carry out inspections at shorter intervals.

9.3.5 Dynamic tests

With empty platform/car

- Drop test after every assembly.
- Drop test in accordance with the maintenance schedule.
- Drop test after replacing the safety gear.

With loaded platform/car

- Drop test before initial operation (refer to chapter 9.3.2 Checks before initial operation, page 89)
- Drop test during recurring checks (refer to national regulations)

During recurring checks, we recommend carrying out the drop test with the rated load (refer to the max. payload) of the loaded car.

The drop test with rated load of the loaded platform/car should only be carried out by competent persons and/or specialists!

⚠ WARNING

Risk of injury

- ➢ Check safety gear for damage.
- ➢ After each drop test, the safety gear must be checked for signs of damage.
- ➢ If any damage is identified on the safety gear, it must be immediately replaced.
- ➢ Operation of the hoist is prohibited until then.

⚠ DANGER

Life hazard from incorrect repair of safety components

- ➢ Repairs to the safety gear should only be carried out by the manufacturer.

- Check the overload detection device (refer to chapter 9.6.1 Overload adjustment, page 101)
- Function check of the motor brake(s) (refer to chapter 9.5.4 Motor/motor brake, page 100)
- Check the braking distance (refer to chapter 9.5.4 Motor/motor brake, page 100)

9.3.6 Structural testing

Structural tests only have to be conducted if national rules require this!

Eurasian Economic Community and Ukraine

- ➢ Move the hoist up approx. 1 m, loaded centrally with 1.5 times the rated load.
- ➢ Measure the distance between each corner of the hoist and the ground and note the values.
- ➢ Repeat the measurement after 15 minutes; no permanent deformities must occur.

9.3.7 Checks after extreme weather conditions

Special test after temperatures below -40 °C [-40 °F]

If it is unclear if the temperature was below -40 °C [-40 °F] when recommissioning, proceed as if the temperature had been reached. Before performing the special test, temperatures must be above -20 °C [-4 °F] for a minimum of 3 hours.

- ➢ Clear ice and snow from the hoist and from the pit if necessary.
- ➢ Switch on the main switch.
- ➢ Press all stop buttons and unlock them again.
- ➢ Check all doors/entrances/footbridges/flaps.
- ➢ Check that all limit switches are moving freely.
- ➢ Check the trailing cable and, if necessary, the cable trolley for smooth operation.

⚠ WARNING

Risk of injury from damaged hoist parts

Notify your superior immediately if any cracks or loose parts/loose screws are discernible. Clarify the further procedure with your superior.

During the test run, do not travel beyond the cracks or loose parts/loose screws. Return to the ground station. Safety inspection of the hoist by a competent person.

The safety inspection which checks for discernible cracks/loose parts/loose screws must also include inspection of the foundation and of the wall anchors.

Operation is prohibited until safe conditions have successfully been restored.

- ➢ Check the ground station/landing level for obvious damage such as loose or deformed parts or parts which have fallen off and cracks in components and weld seams.
- ➢ Test run with empty car to the UP limit switch: Check that the threaded connections on the mast/ladder parts/anchors are securely fastened and check for cracks in components and weld seams.
- ➢ Check the overload protection, if fitted.

Special check after flooding

Damage to the hoist as a result of running into a flooded pit. Loss of stability of the foundation due to flooding.

- ➢ Check the foundation/buffer.
- ➢ Check the enclosure.

Special check after sand storm

Damage to the hoist as a result of the switch box filter-pads becoming blocked.

- Clean the filter pads.
- Check smooth operation of the safety devices/limit switches.

9.4 Replenishment and Inspection Tasks

9.4.1 Lubrication of the gear rack/drive pinion

⚠ CAUTION	
	**Increased wear** If **GEDA POWER GREASE** is not used, higher wear can occur on the gear rack and drive pinion. Any warranty cover is therefore excluded.

9.4.1.1 Manual lubrication

For initial lubrication, under extreme conditions or on machines **without an automatic lubrication device**, the gear rack has to be lubricated manually.

- Place the grease gun on the nipple (1).
- During travel, lubricate the gear rack with the grease gun.

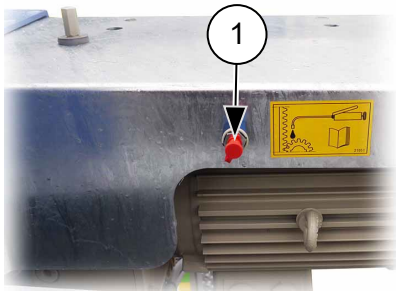


Fig. 57: Lubricating the gear rack manually

Recommended lubricant for normal operation

- **GEDA** POWER GREASE 1000 (set) item no. 66102

Recommended lubricant for extreme conditions

- **GEDA POWER GREASE 7000** [set] item no. 66100

9.4.1.2 Automatic lubrication device

(Accessories)

The quantity of grease in the container is sufficient for approx. 120 operating hours (≈ 2 months/1 shift operation).

The grease reservoir must be refilled before it is completely empty.

- Filling capacity: 1.2l [0.32 gall.]

⚠ CAUTION	
	**Damage to the lubricant pump** Do not use grease containing solid lubricants [z. B. GEDA POWER GREASE 7000]. This can damage the lubrication device. ➢ Check gear racks for deposits every week. ➢ Remove any deposits. ➢ Re-lubricate gear racks.

Recommended lubricant

- **GEDA POWER GREASE 1000** item no. 13457

Topping up through the fill nipple

➢ Place the grease gun on the nipple (1).

➢ Top up the reservoir to the "MAX" mark.

Fig. 58: Lubrication device

Quick filling with a grease gun

➢ Remove the cap from the filling port (2).

➢ Insert the grease gun (3) into the filler neck to the stop.

➢ Top up the reservoir to the "MAX" mark.

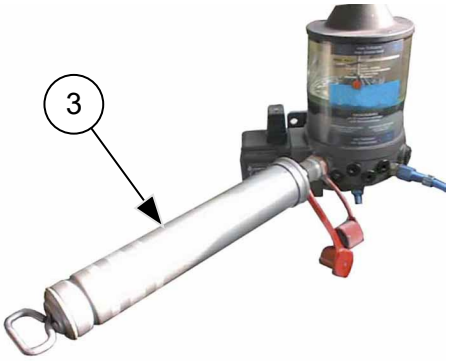


Fig. 59: Filling gun

9.4.2 Coating the trailing cable with lubricant

Trailing cables must be heavily coated with talcum powder before initial commissioning and subsequently according to the inspection schedule!

Recommended anti-friction lubricant

- **Talcum powder** item no. B1156

⚠ CAUTION

Increased wear of the trailing cable

To prevent damage to the trailing cable, **GEDA** recommends using only this lubricant!

Assembly

➢ Shake talcum powder vigorously into the cable bin from outside the barrier/base enclosure.

➢ Spread the talcum powder in the complete cable bin.

Moving up the platform

➢ Move up the platform with the ground control.

→ For using the control, refer to the Operating Manual.

➢ Apply the loose talcum powder to the cable sheath with a dry cloth or sponge during travel.

Fig. 60: Applying talcum powder

9.4.3 Gearboxes

Check gearboxes at least every six months

- ➢ Check for running noises that could indicate possible damage to bearings.
- ➢ Carry out a visual check for leaks on the seals.

Gearbox oil / change intervals

Oil for gearbox (230-V drive)		
Grade/quality	Filling volume	Change intervals
CLP 220 (DIN 51517-3)	0.4 l (0.11 gal)	approx. 10 000 h

Oil for gearbox (400-V drive)		
Grade/quality	Filling volume	Change intervals
CLP 220 (DIN 51517-3)	0.5 l (0.14 gal)	approx. 10 000 h

Manufacturer's recommendation:

Shorter change intervals apply in case of particularly challenging operating conditions, e.g.

- high humidity
- aggressive atmosphere
- large temperature fluctuations

The gearbox oil must also be changed after an extended idle period (more than 1 year).

9.4.4 Checking the threaded connections

- ➢ Check that the mast connection bolts are securely fastened.

Tightening torque = **90 Nm [66 lbf ft]**
Width across flats (AF) = 22 mm

Mast brackets

- ➢ Check the mast anchor bolts on the mast and building for secure fit.

Anchoring tube couplings

Tightening torque for 1 1/2" couplings = **50 Nm [37 lbf ft]**

Check the parts installed on the mast

- Stop bars
- Mast brackets
- Cable guides, etc.

for secure fit.

9.5 Checking for wear

⚠ WARNING

Risk of injury from components failing

- Parts must be replaced immediately if the specified wear limits are exceeded.
- Hoist operation is prohibited until the parts have been replaced. All parts also have to be inspected for damage (deformation, cracks, cavities, etc.).

9.5.1 Mastsegments / gear racks

Mast section

- Visually check the mast sections for kinks, shrinkage, faulty welding seams.
- Check the running surfaces on the mast for signs of cracks and damage.
- Visually inspect the connecting bolts for damage. The nuts must be installed and easy to turn.

Fig. 61: Mast section

⚠ DANGER

Risk of death when using defective mast sections

- Defective mast sections must be replaced immediately. Operation is not permitted until the defective section has been replaced.

Gear rack

Calculating wear

Wear is calculated using a calibrated vernier calliper at the upper and lower end of the rack at 3 teeth respectively with the corresponding measuring pin. When checking the rack for wear, always carry out a visual inspection for cavities, flaking, groove formation/scoring and deformations.

Fig. 62: Wear limit rack

Change to the contour through pronounced wear gives smooth operation, increased vibration.

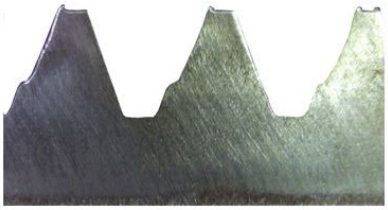


Fig. 63: Change to the contour due to wear

Material abrasion due to wear can lead to possible component failure due to tooth breakage.

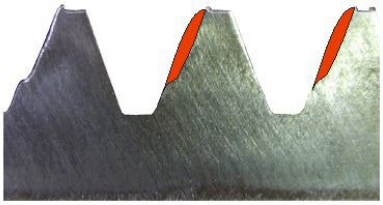


Fig. 64: Material abrasion due to wear

Wear limit racks

Modul m 6

(A) min.:	(A) setpoint
38.3 mm	39.6 mm

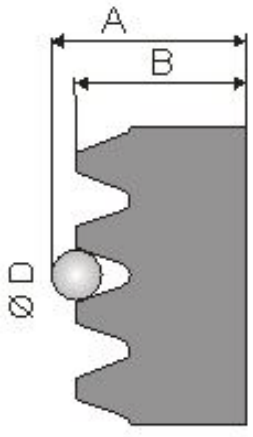


Fig. 65: Wear limit racks

Measuring pin: (D) = 0.47 inch (12 mm) (+0,0 / -0,11 mm [0.0043“])
Auxiliary dimension (B) = 35,0 mm

Check that all racks are secure. Tightening torque 24 Nm

9.5.2 Gearwheels

Calculating wear

Only use a calibrated vernier calliper to measure at three different locations within the visible wear area (1)

(area of the gear wheel in contact with the gear rack).

Fig. 66: Determining wear 1

When measuring wear, always consider

- Burr formation
- Cracks/deformation
- Asymmetric wear (2)

IMPORTANT

- Always measure from the point of the least pitch diameter in the event of asymmetric wear.
- In the event of ridge formation, remove these from the measurement.
- Remove lubricants or dirt from the measurement area.

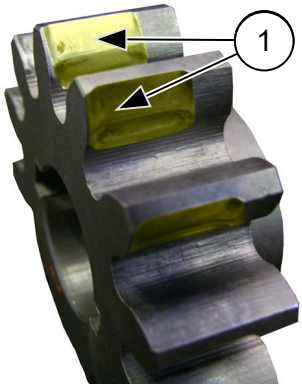


Fig. 67: Determining wear 2

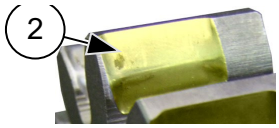


Fig. 68: Determining wear 3

Replacing the gearwheels

An experienced fitter in the assembly/dismantling of gears/shafts should replace the gearwheels. The new gearwheel can be heated up to approx. 150 °C during assembly. The feather key and circlip must also be replaced every time a gearwheel is replaced.

Drive pinion/safety gear pinion

Outer diameter:	83.6 mm
Number of teeth:	12
Module m:	6
Wear limit	
Dimension X new	27.8 mm
Dimension X min.	27.5 mm

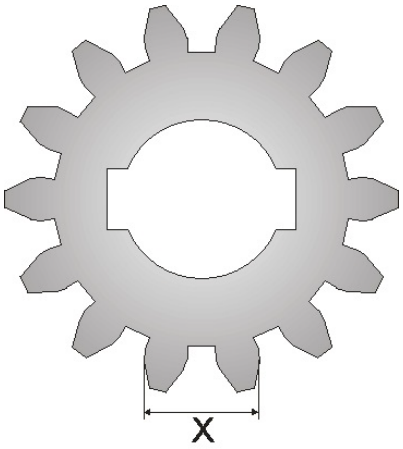


Fig. 69: Drive pinion

Measure dimension X across two teeth (in at least three different locations) in the area in which wear is visible.

9.5.3 Track rollers

Calculating wear

Wear is calculated using a calibrated vernier calliper. Also check for scoring, cavity formation and flaking.

Check play and condition of the bearing.

A circlip must be installed.

The roller must be replaced once it reaches/exceeds the wear dimensions.

Track roller (white)

Item No.:	11626
Wear limit	
Ø normal	$60_{-0,30}$ mm
Ø min.	58.7 mm

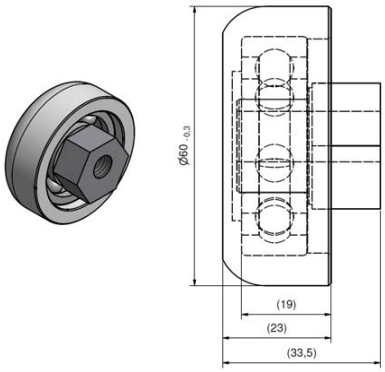


Fig. 70: Track roller 11626

Replacing the track rollers

⚠ DANGER

Lethal hazard from falling tools/objects

➢ Secure tools/parts from falling during maintenance/assembly.

Track roller installed with an eccentric shaft

➢ Remove the screw (2) and track roller (1).

➢ Use the eccentric shaft (1A) to adjust the new track roller to the mast.

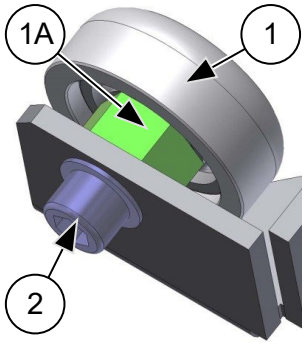


Fig. 71: Track roller with an eccentric shaf.

9.5.4 Motor/motor brake

Carry out the following maintenance/service work in accordance with the instructions in the manufacturer's manual.

Motor:

- Clean.
- Check ball bearings; replace if necessary. (Also replace the shaft seal when replacing a ball bearing.)
- Clean the cooling air passages.

Check the braking distance:

➢ Stop the platform loaded with the rated load (refer to "Load capacity") while it is travelling downwards (e.g. DOWN limit switch).

→ The overrun of the motor brakes must not exceed 30 mm.

9.6 Function tests

9.6.1 Overload adjustment

The overload setting for the platform must be checked!

✓ The load platform must not move, the red control light (1) on the trolley switch box must light up and an alarm signal must sound.

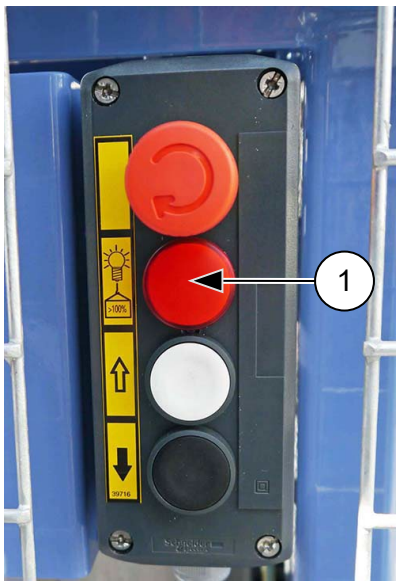


Fig. 72: Overload indicator

The switching contact of the overload limit switch is within the safety circuit. Travel in both directions is blocked!

9.6.2 Inspecting the safety gear

The material hoist is equipped with a safety gear which brakes the load platform in the event of it overspeeding. Further travel is not possible once the safety gear has been triggered.

⚠ WARNING

Risk of death from the safety gear being triggered

- ➢ Determine why the safety gear has engaged, secure the load platform and repair the damage before releasing the safety gear!
- ➢ The safety gear may only be released by a competent person who is specifically appointed by the owner and who, due to their training, knowledge and practical experience, are able to evaluate the risks and assess the safe condition of the safety gear.

The drop test can only be carried out when the **emergency stop** safety circuit is open, that means:

- all platform access points are closed
- no emergency stop button is pressed

The drop test is only permitted when

- there are no persons in or below the platform
- there are no objects in the travel path
- it is activated from a safe distance

The main switch on the ground station switch box must be switched on (position "**1**" [ON]).

The key switch on the platform must be set to “Operation” and the key has to be removed.

➢ Attach the pull cord to the brake release lever (1) with a loop and lower it freely to the floor.

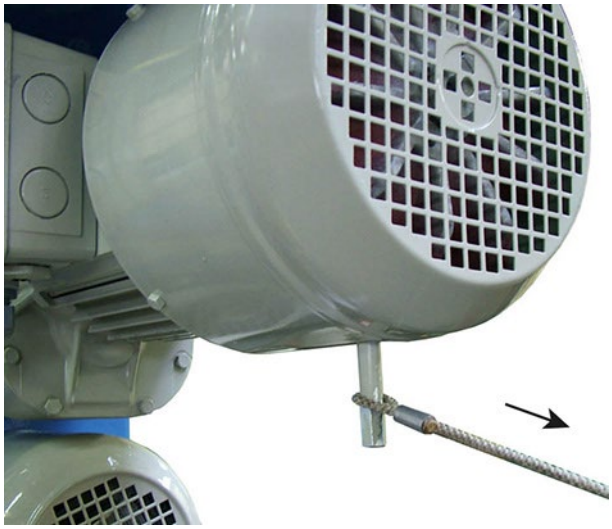


Fig. 73: Releasing the brake

➢ From outside the hazard area, press the **UP** button on the ground control.

➢ Move the platform to a height of approx. 6 m.

➢ Pull on the cord from below, outside the hazard area.

→ The motor brake releases and the platform builds up excess speed.

✓ The safety gear has to stop the platform after approx. 2 – 3 m.

If the platform does not stop:

➢ Immediately release the pull cord or brake release lever.

Safety gear passed

Further travel is not possible once the safety gear has been triggered.

Reset the safety gear

If any damage is identified on the safety gear, it must be immediately replaced.

Hoist operation is prohibited until it has been repaired.

➢ Turn the main switch to OFF.

➢ Secure the machine against switching on.

Drop test not unsuccessful

⚠ WARNING

Risk of injury

- ➢ Immediately replace the safety gear.
- ➢ Operation of the hoist is prohibited until then.

Ground control/manual control

1 **EMERGENCY stop** button

3 **UP** button

4 **DOWN** button

1 **Selector switch** MANUAL (I) -
3 AUTOMATIC (II)

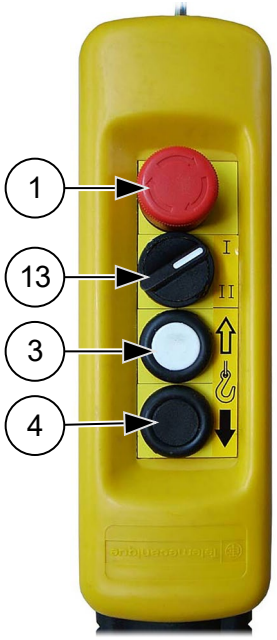


Fig. 74: Ground control/manual control (position I)

- ➢ Press the **DOWN** button (4) and move the platform to the ground station.
- ➢ Unplug the control(s) and secure it.
- ➢ Switch off the machine at the main switch and secure it against being switched on.
- ➢ Inform the employer; clarify the further procedure.

9.6.2.1 Check the safety gear for damage

⚠ WARNING

Risk of injury

- ➢ Check safety gear for damage.
- ➢ After each drop test, the safety gear must be checked for signs of damage.
- ➢ If any damage is identified on the safety gear, it must be immediately replaced.
- ➢ Operation of the hoist is prohibited until then.

⚠ DANGER

Life hazard from incorrect repair of safety components

➢ Repairs to the safety gear should only be carried out by the manufacturer.

1. Turn the main switch to the „0“ position.
2. Secure against switching on.

Check

3. the brake pads for damage
4. the flyweights for ease of movement.
5. condition of welded seams.
6. condition of springs.
7. corrosion and deformation.

10 Malfunctions – diagnosis – repair

⚠ WARNING

Risk of injury from incorrect troubleshooting and fault elimination

- ➢ Troubleshooting and the fault elimination may only be carried out by persons specially trained and authorized for this purpose.
- ➢ Before troubleshooting, lower the platform and unload it if possible!
- ➢ Immediately discontinue operation if faults occur that endanger operational safety!

⚠ DANGER

Electric shock from live parts

- ➢ Before working on the electrical system, switch off and lock the main switch. For safety reasons, disconnect the mains plug.

10.1 Fault table

The following table lists potential malfunctions and the appropriate remedial action.

Malfunction	Cause	Remedial action
Green control light off		
	Mains plug disconnected	Plug in the mains plug.
	Main switch off	Switch on the main switch.
	Fuses in the trolley switch box OK?	Check/remedy.
Green control light **lights up**, platform does not move.		
	EMERGENCY STOP button (at a control point) pressed	Unlock the **EMERGENCY STOP** button.
	Ramp open	Close ramp.
	Platform on scaffolding/building	Move the platform to transport position.
	Assembly guard bar open	Relieve the assembly guard bar.
	EMERGENCY limit switch activated	Refer to “Platform has travelled too high/too low”.
	Safety gear engaged	Release the safety gear. (refer to chapter 10.2.6 Safety gear has triggered, page 109)
Red control light lights up.		
	Overload protection was triggered	Reduce the load
Platform only moves upwards		

Green control light off		
	Is the **DOWN** limit switch functioning properly	Check/replace the **DOWN** limit switch
Platform only moves upwards		
	Is the **UP** limit switch functioning properly	Check/replace the **UP** limit switch
Platform moved too high (refer to chapter 10.2.3 Platform has travelled too high, page 107)		
	UP limit switch defective	Check/replace UP limit switch
	Fault in the electrical system	Check system
Platform moved too low (refer to chapter 10.2.4 Platform moved too low, page 108)		
	DOWN limit switch defective	Check/replace DOWN limit switch
	Fault in the electrical system	Check system
	Air gap for the brake is too large	Adjust the air gap
Motor does not attain full performance		
	Voltage drop of more than 10%	Select a supply cable or extension cable with a greater cross section

10.2 Rectify fault

10.2.1 Motor is not delivering full power

- Voltage drop of more than 10 % of the rated voltage.
- Select cable with larger cross-section.
- The integrated thermal switches turn off the control current when overloaded. Work can continue after a certain cooling down period (possibly reduce load).

⚠ CAUTION

Motor overload from overloading the machine

The motor heats up and the motor/brake service life is reduced.

10.2.2 Phase sequence or phase failure

If the green control light does not illuminate, check the following points:

- Is there a phase failure?
- Is the phase sequence (direction or rotation) incorrect?
- If the phase sequence is incorrect, correct it on the phase inverter (1) (power supply plug) by turning the two plug pins by 180° using a screwdriver.

Fig. 75: Plug with phase inverter

- Is the trailing cable connected to the trolley?
- Are the fuses in the ground station switch box serviceable?

10.2.3 Platform has travelled too high

The platform travels too high, i.e. the EMERGENCY limit switch of the platform reaches the **UP-END** stop rail.

Possible causes:

- the **UP** limit switch is defective
- there is a malfunction in the electrical system

Action:

- Bleed the motor brake using the brake release lever (refer to chapter 10.3.2 Rescue action plan, page 112).

10.2.4 Platform moved too low

The platform moves too low, i.e. the **EMERGENCY** limit switch of the platform reaches the lower **EMERGENCY STOP** stop rail.

Possible causes:

- The brake clearance is too large.
- The **DOWN** limit switch is defective.
- There is a malfunction in the electrical system.
- The platform is overloaded.
- The platform was lowered with the manual brake release.

Action:

➢ Pull up the rod (1) while pressing the UP button on the manual control.

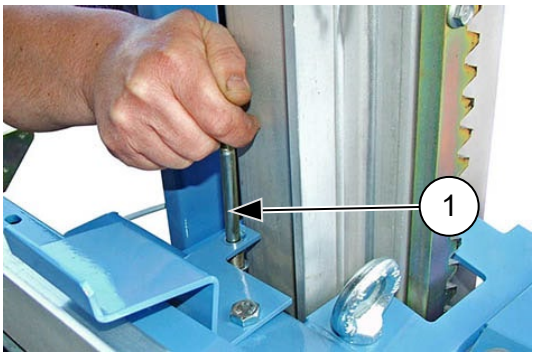


Fig. 76: Action if the platform has travelled too low

✓ The platform moves upwards.

If this effect occurs repeatedly despite the car not being overloaded, have the brake checked and adjusted by a qualified person.

The lower area of the gear rack is fitted with a rack and pinion segment (2) with a predetermined breaking point.

This rack and pinion segment prevents the drive unit being damaged in the event of any impact against the foot section.

➢ The rack and pinion segment must be examined and immediately replaced if damaged.

Fig. 77: Predetermined breaking point on the gear rack of the base mast

The rack and pinion segment can also be installed rotated 180°.

10.2.5 Overload detection device has triggered

The material hoist is equipped with an overload warning device which prevents the platform from starting when it is overloaded.

If the platform is overloaded, a red control light (8) on the platform lights up.

Action:

- ➢ Reduce the load on the platform until the red control light (8) goes out.
  - ✓ Only then is travel possible.

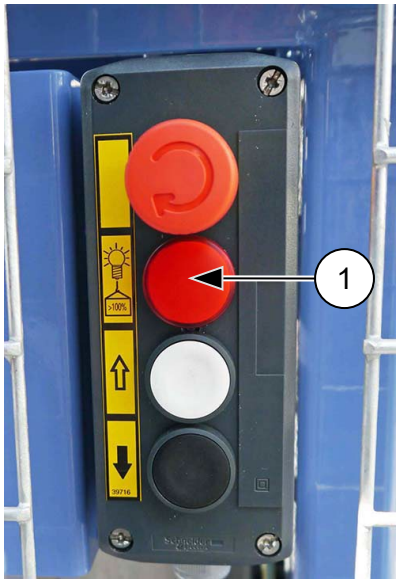


Fig. 78: Overload indicator

10.2.6 Safety gear has triggered

The material hoist is equipped with a safety gear which brakes the load platform in the event of it overspeeding. Further travel is not possible once the safety gear has been triggered.

⚠ WARNING	
	**Risk of death from the safety gear being triggered** ➢ Determine why the safety gear has engaged, secure the load platform and repair the damage before releasing the safety gear! ➢ The safety gear may only be released by a competent person who is specifically appointed by the owner and who, due to their training, knowledge and practical experience, are able to evaluate the risks and assess the safe condition of the safety gear.

Releasing the safety gear

Downward travel is mechanically blocked by the safety gear and can be pressed again only after brief upward travel!

- ➢ Release the lock nut (1) on the safety gear.
- ➢ Rotate the safety-gear protective cover (2) to the left until the limit switch tag (3) engages in the slot of the protective cover.
- ➢ Re-tighten the lock nut (1).

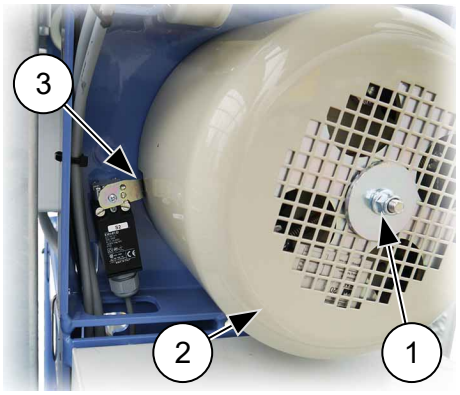


Fig. 79: Resetting the safety gear

- ➢ Move the platform up a little.
  - ✓ The safety gear releases and the hoist is ready to run again.

After the safety gear has been activated, it must be inspected for signs of damage. The safety gear must be checked by a competent person.

10.3 Rescuing the platform

Rescue may become necessary in the event that, e.g.

- there is no mains voltage.
- the electrical system malfunctions.
- the drive fails.
- the safety gear has triggered.

If the operating personnel do not feel confident or qualified to organise and carry out the rescue, relevant authorities (maintenance personnel, customer service, ...) must be informed.

10.3.1 Basic conduct in the event of a rescue/malfunction

- Obtain an overview of the situation.
- Remain calm and do not act in haste.
- Be cautious and thorough when assessing the situation!
- Keep unauthorised persons away.
- Attempt to find the cause of the malfunction/defect on the system, e.g.
  - Power failure
  - Triggering of the safety gear
- Notify your supervisor of the malfunction.
- If necessary, inform the maintenance personnel or customer service.

The sequence of measures can/must be amended by the operating/maintenance personnel depending on the specific situation.

10.3.2 Rescue action plan

Action 1: Check the EMERGENCY STOP button.

It may have been actuated accidentally.

1. Unlock the **EMERGENCY STOP** button (1).
2. Press the **UP**- (3) or **DOWN** button (4) to continue travel.
   ✓ The platform starts moving.

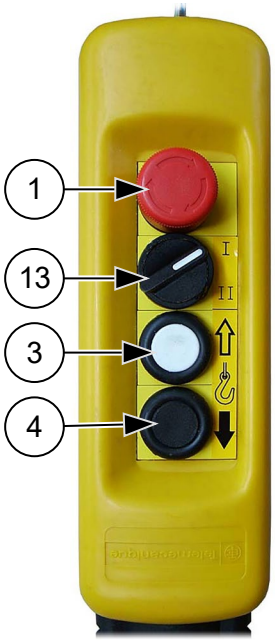


Fig. 80: Manual control / ground control

Action 2: Checking the manual control (ground control)

Repair/replace the control.

➢ Press the **UP** (3) or **DOWN** button (4) to continue travel.
   ✓ The platform starts moving.

Action 3: Rescue using EMERGENCY descent

During an **EMERGENCY** descent, the motor brake is releases to lower the platform to the ground station.

Releasing the motor brake

➢ Remove the brake release lever (1) from the mount (2) and screw it into the brake release thread (3).

➢ Release the motor brake by very carefully pulling the brake release lever.
   ✓ The platform glides downwards.

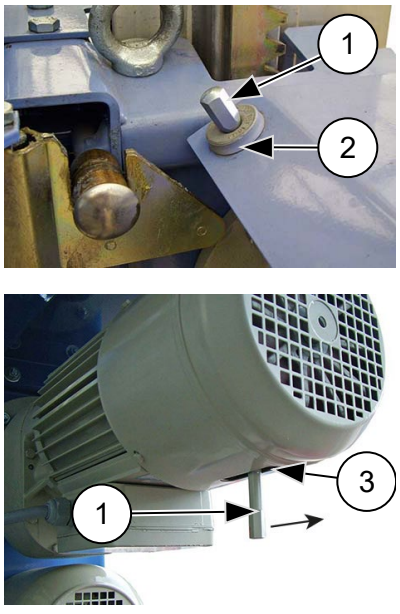


Fig. 81: Releasing the brake

⚠ CAUTION

Risk of death due to inexpert maintenance

The brake can become very hot.

Free drop of the platform (until the safety gear is activated) when the motor brakes are fully opened.

- ➢ The brake release lever must be operated extremely carefully to prevent the safety gear from engaging.
- ➢ Interrupt the lowering process for 2 minutes at the latest after every 1 – 2 meters. The length of a mast section can be used as a guide.
- ➢ Once the safety gear has engaged, it will not be possible to progress any further without raising the car. The safety gear must be reset (refer to chapter 9.6.2 Inspecting the safety gear, page 101)
- ➢ Only persons authorised by the employer are permitted to release the motor brakes.

- ➢ Release the brake release lever (rope) when the next stop position or the ground has been reached.
- ➢ Stop in front of the landing level safety gates so that the floor of the platform is slightly above the sill of the landing level safety gate.

ATTENTION

Damage to the machine from hard stop on the foot section

- ➢ Always stop on the ground above the lower stop rail!

Action 4: Rescue in accordance with the employer's emergency plan.

The employer must prepare an emergency plan and keep it in a clearly visible place on the material hoist!

10.4 Repair

ATTENTION	
	**Maintenance work carried out by untrained personnel** ➢ Repair work may only be carried out by trained and competent persons because it requires special expert knowledge and skills. Neither is explained in this Operating Manual.

When ordering spare parts, please provide the following:

- Type
- Year of construction
- Serial number
- Operating voltage
- Quantity required

The name plate is located on the trolley of the base unit.

Spare parts must conform to the manufacturer’s technical specifications! Only use original spare parts from GEDA.

For service or repair work, please contact our customer service department:

For the sales and customer service address, (refer to chapter 1.4 Manufacturer's name and address, page 14)

11 Disassembly

The same regulations and safety instructions apply to dismantling (refer to chapter 5 Assembly, page 33).

Dismantling is generally carried out in reverse order to installation. Additionally observe the following instructions:

- Dismantle the landing level safety gates first (mount the 3-part protection first).
- Before removing the ladder bracket, check to ensure that all ladder interlock devices are engaged.
- The platform must be stopped in such a way that end of the ladder section to be removed is located above the upper edge of the trolley.
- Only release the rail brackets if there are no further ladder sections above the anchoring.
- Always unload the platform in between.

12 Disposal

At the end of its useful life, the machine may need to be inspected for operational safety in accordance with national regulations, disassembled correctly and scrapped in an environmentally friendly way according to national provisions.

It is prohibited to use parts from a machine that is being scrapped in other machines or to assemble such parts to produce a new machine.

During disposal of the machine components, observe the following:

- Drain and dispose of oil/grease in an environmentally friendly way.
- Recycle metal parts.
- Recycle plastic parts.

Recommendation:

Contact the manufacturer or commission a specialist company to handle disposal requirements in accordance with the applicable regulations.

13 Summary of instruction signs

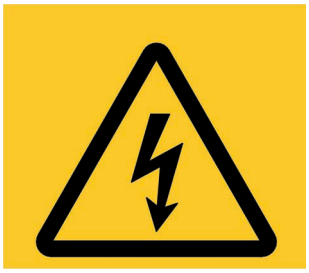


Fig. 82: Item No.: 05242 (all switch boxes)

Fig. 83: Item No.: 14657 (trolley)

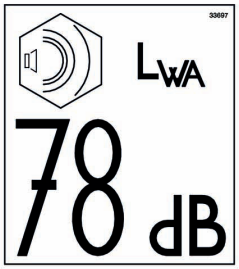


Fig. 84: Item No.:33697(trolley)

Fig. 85: Item No.: 16688 (Manual control)

Fig. 86: Item No.: 14523 (trolley switch box)

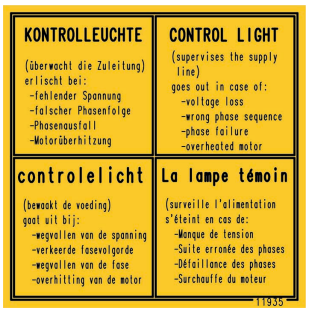


Fig. 87: Item No. 11935 only with a 400 V drive (switch cabinet with main switch)

Fig. 88: Item No. 07223 (DE) only with a 230 V drive (sliding carriage switch cabinet)

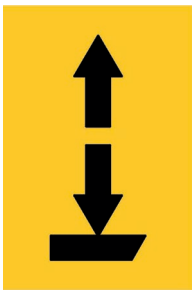


Fig. 89: Item. No. 15431) (safety gear)

Fig. 90: Item No. 16521 (assembly guard plate)

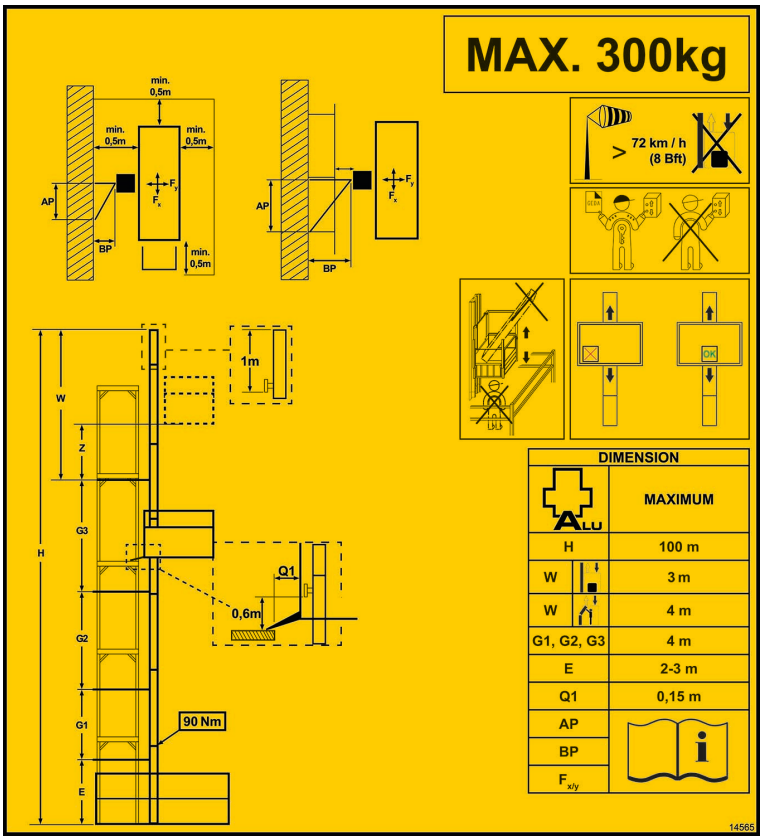


Fig. 91: Item No. 14565 (assembly guard plate)

Fig. 92: Item No.16688 (manual control)

14 Documenting the checks

Documentation for ☐ regular checks in accordance with the maintenance schedule ☐ recurring check in accordance with national rules ☐ unscheduled check after specific events

Name: Year of manufacture:	Serial number:

The hoist was checked on _____ . As a result ☐ no defects ☐ the following defects were determined:

Scope of inspection:
Outstanding part checks:

Continued operation is: ☐ forbidden ☐ permitted	Follow-up inspection is ☐ required ☐ not required

Place, date: Signature (Specialist/competent person*) *Name of competent person Stamp Employer's address:

Employer Defects acknowledged:	
Defects rectified:	

Documentation for ☐ regular checks in accordance with the maintenance schedule ☐ recurring check in accordance with national rules ☐ unscheduled check after specific events	
Name: Year of manufacture:	Serial number:

The hoist was checked on _____ .

As a result

☐ no defects

☐ the following defects

were determined:

Scope of inspection:
Outstanding part checks:

Continued operation is:	Follow-up inspection is
☐ forbidden	☐ required
☐ permitted	☐ not required

Place, date:

Signature (Specialist/competent person*)

*Name of competent person

Stamp

Employer’s address:

Employer Defects acknowledged:	
Defects rectified:	

Documentation for ☐ regular checks in accordance with the maintenance schedule ☐ recurring check in accordance with national rules ☐ unscheduled check after specific events	
Name: Year of manufacture:	Serial number:

The hoist was checked on _____ .

As a result

☐ no defects

☐ the following defects

were determined:

Scope of inspection:

Outstanding part checks:

Continued operation is:	Follow-up inspection is
☐ forbidden	☐ required
☐ permitted	☐ not required

Place, date:

Signature (Specialist/competent person*)

*Name of competent person

Stamp

Employer's address:

Employer Defects acknowledged:	
Defects rectified:	

Documentation for ☐ regular checks in accordance with the maintenance schedule ☐ recurring check in accordance with national rules ☐ unscheduled check after specific events	
Name: Year of manufacture:	Serial number:

The hoist was checked on _____ .

As a result

☐ no defects

☐ the following defects

were determined:

Scope of inspection:
Outstanding part checks:

Continued operation is:	Follow-up inspection is
☐ forbidden	☐ required
☐ permitted	☐ not required

Place, date:

Signature (Specialist/competent person*)

*Name of competent person

Stamp

Employer's address:

Employer Defects acknowledged:	
Defects rectified:	

Documentation for ☐ regular checks in accordance with the maintenance schedule ☐ recurring check in accordance with national rules ☐ unscheduled check after specific events	
Name: Year of manufacture:	Serial number:

The hoist was checked on _____ .

As a result

☐ no defects

☐ the following defects

were determined:

Scope of inspection:

Outstanding part checks:

Continued operation is:	Follow-up inspection is
☐ forbidden	☐ required
☐ permitted	☐ not required

Place, date:

Signature (Specialist/competent person*)

*Name of competent person

Stamp

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BL131 GB 2024-09