Operating Manual

GEDA® 500 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:	500 Z	Serial number:	14830... / 000680...
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, EN60204-1/32:2018, EN12158-1:2010

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 10.01.2023

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 16).

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 500 Z
Serial number:	14830... / 000680...
Year of construction:	Refer to name plate
Documentation version:	2024-09

1.4 Manufacturer's name and address

GEDA GmbH
Mertinger Strasse 60
86663 Asbach-Bäumenheim
Tel.: +49 (0)9 06 / 98 09-0
Fax: +49 (0)9 06 / 98 09-50
E-Mail: info@geda.de
Web: www.geda.de

Representatives of the manufacturer

Bergkamen subsidiary	Gera subsidiary
GEDA GmbH Northwest Subsidiary Marie-Curie-Strasse 11 59192 Bergkamen-Rünthe Tel. +49(0)2389 9874-32 Fax. +49(0)2389 9874-33	GEDA GmbH Eastern Subsidiary Ernst-M.-Jahr Strasse 5 07552 Gera Tel. +49(0)365 55280-0 Fax. +49(0)365 55280-29
U.S. subsidiary	**Korea Subsidiary**
GEDA USA, LLC 1151 Butler Road League City (Houston), TX 77573 Tel. +1(713) 621 7272 Fax. +1(713) 621 7279 Web: www.gedausa.com	GEDA KOREA 1708, (MetroDioVill Bldg., Singongdeok-dong) 199, Baekbeom-ro, Mapo-gu, Seoul 04195 Korea Tel.: +82 2 6383-7001 Fax: +82 2 6383-7009 Web: www.gedakorea.com

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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 byGEDA . 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 500 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 500 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 23) 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.

1.7.1 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 500 Z

- is not designed for permanent installation
- must not be installed as a free-standing unit above 6.0 m without load weights on the foot sections

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 23).

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**.

For further instructions on maintenance, maintenance intervals and servicing, refer to the maintenance manual.

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 6 Disposal, page 71).

The aforementioned safety measures also apply to troubleshooting.

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 Tightening torques

Special mechanical threaded connections with torque control

Mast – elements to one another		
Tightening torque		
150 Nm	110 lbf ft	
Width across flats (AF) 24 mm		

Couplings		
Tightening torque		
50 Nm	37 lbf ft	Couplings 1 ½"
100 Nm	74 lbf ft	Couplings 2"

General mechanical fittings without torque control

Tightening torques (All details refer to screws with strength class 8.8)					
M8	25 Nm	18 lbf ft	M18	300 Nm	221 lbf ft
M10	49 Nm	36 lbf ft	M20	425 Nm	313 lbf ft
M12	86 Nm	63 lbf ft	M22	575 Nm	524 lbf ft
M14	135 Nm	100 lbf ft	M24	710 Nm	524 lbf ft
M16	210 Nm	159 lbf ft	M30	1445 Nm	1066 lbf ft

Electrical screw connections

Tightening torques					
M4	1.2 Nm	0.88 lbf ft	M12	15.5 Nm	11 lbf ft
M5	2 Nm	1.47 lbf ft	M16	30 Nm	22 lbf ft
M6	3 Nm	2.21 lbf ft	M20	52 Nm	38 lbf ft
M8	6 Nm	4.42 lbf ft	M24	80 Nm	59 lbf ft
M10	10 Nm	7.37 lbf ft	M30	150 Nm	110 lbf ft

3.4 Electrical connected loads

Base unit

Operating voltage	400 V / 50 Hz / 3 x 16 A 3 x Ph/N/PE
Protection rating	IP 54 (NEMA 3)

Drive 400 V / 50 Hz

Power	5.5 kW
Current consumption	13 A
Start-up current	approx. 70A
Duty cycle	S3 (60%)
Motor brake	190 V DC, 0.3 A
Working power socket (in the platform)	230 V / 16 A

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

- min. 3 x 16 A fuse protection of the supply point and a
- residual current device (RCD)

are required.

3.5 Speeds

Machine:

Rated speed	24 m/min.

Safety gear for 500 Z

Triggering speed	max. 48 m/min. (157 ft/min)

3.6 Heights

Loading height (threshold height) [on the floor]	min. 0.32 m
Installed height (H), free-standing [without ballast weights on the foot section]	max. 6.0 m
Installed height (H), free-standing [with ballast weights on the foot section]	max. 9.0 m
Installed height (H) [installed with wall brackets]	max. 100 m
Assembly site elevation: (metres above sea level)	max. 1000 m (3289')

3.7 Mast

UNI-X-MAST

Only original GEDA mast sections may be used!

UNI-X-MAST
(item no. 03350)

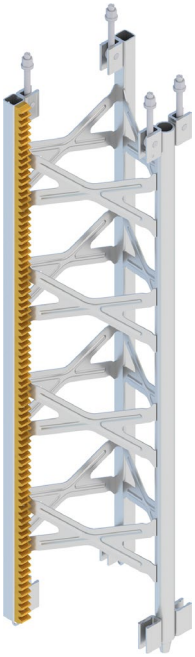


Fig. 1: UNI-X-MAST

Uni-Mast
(item no. 01150)

Fig. 2: UNI-Mast

If UNI-X-Mast parts UNI-Mast parts are installed together, only the anchoring spacings and anchoring forces for the Uni-Mast apply!

Length	1.5 m
Weight	40 kg
Tightening torque (connecting bolts)	150 Nm
Vertical distance trailing cable guide	≤ 6 m

⚠ DANGER

Danger to life

Limited overrun at the last mast bracket.
Dimension **W** is the top mast bracket to the top track rollers (approx. 0.5 m below the mast end).

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

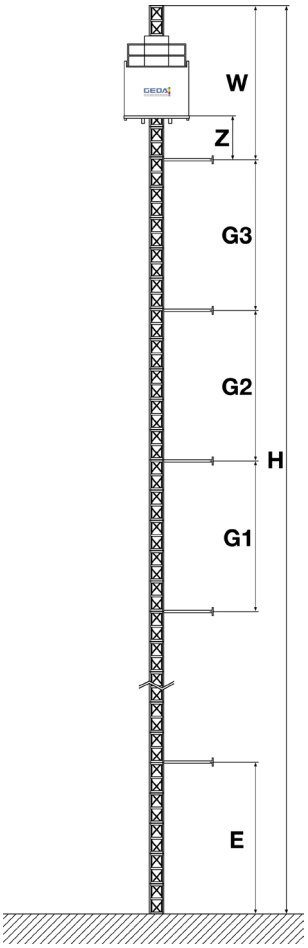


Fig. 3: Anchoring diagram

Assembly only with UNI-X-Mast

W =	**Operation:**	5 m
	Assembly:	7.50 m
Z =		3.50 m
H =		100 m
G =		8 m
E =		4 m

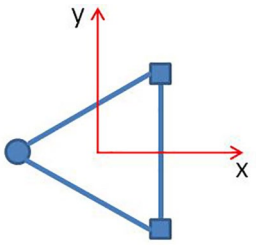
Mixed assembly with UNI-X-Mast and Uni-Mast

W =	**Operation:**	3.0 m
	Assembly:	5.5 m
Z =		1.50 m
H =		100 m
G =		6 m
E =		4 m

Inclination of mast
for vertical installation

max. $\frac{\textbf{installation height (H)}}{\textbf{500}}$

in X and Y direction



Example 1

Installed height = 50 m

$\frac{50\ m}{500} = 0.1\ m$

Example 2

Installed height = 100 m

$\frac{100\ m}{500} = 0.2\ m$

3.8 Load capacity, dimensions and weights

Fig. 4: Base unit 500 Z

Load capacity

Operation	max. 500 kg
Assembly up to the second mast tie	max. 250 kg
Assembly from the second mast tie	max. 500 kg

Dimensions/required space

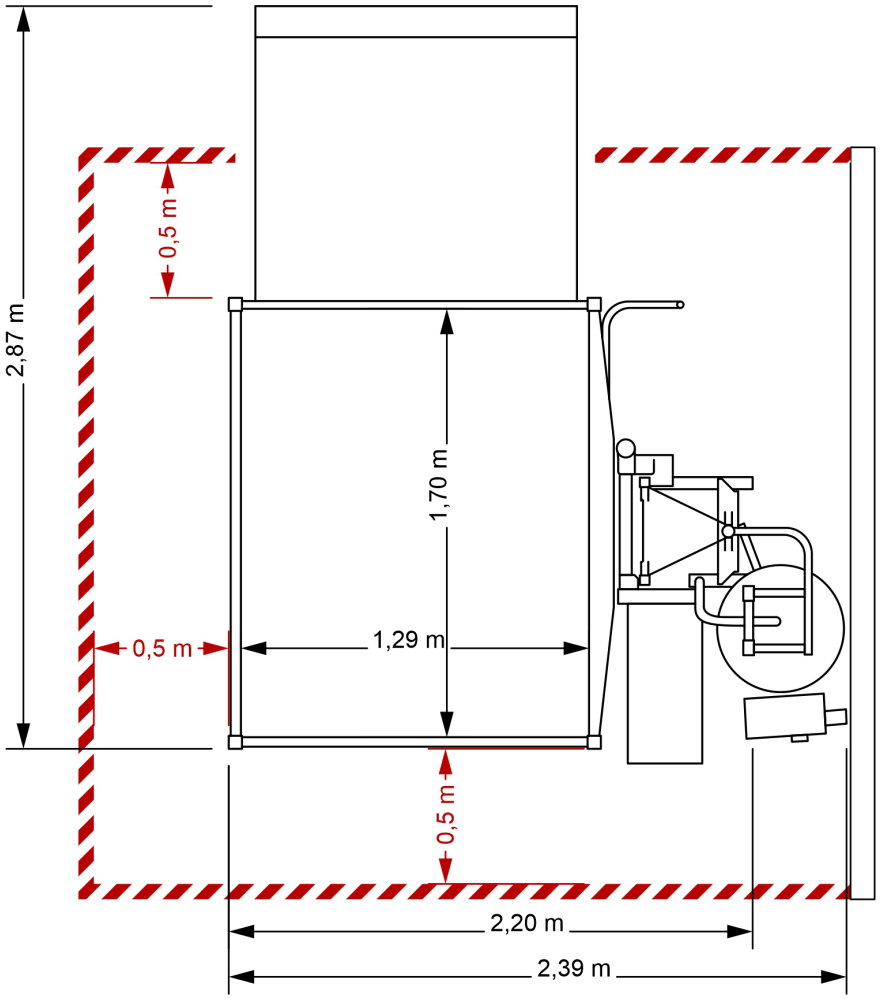


Fig. 5: Space requirements

Height	2.3 m

Weights

Base unit with platform	520 kg

Cable bin with trailing cable

	Weight
25 m lifting height	65 kg
50 m lifting height	80 kg
75 m lifting height	95 kg
100 m lifting height	110 kg

4 Operation

The 500 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 14)

4.1 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 16) 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.
- Operation must cease under the following conditions:
  - at temperatures below -20°C and above +40 °C.
  - in case of damage or other malfunctions.
  - A recurring inspection/intermediate inspection has been missed (refer to the maintenance manual).

4.2 Commissioning

1 Main switch

2 Control light, ready for operation

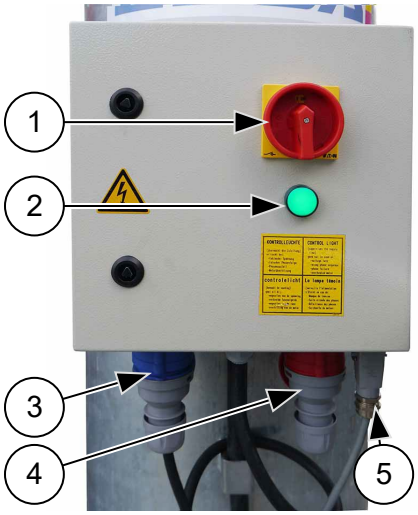


Fig. 6: Ground station switch box

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] .

✓ The green control light (2) lights up for confirmation.

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.

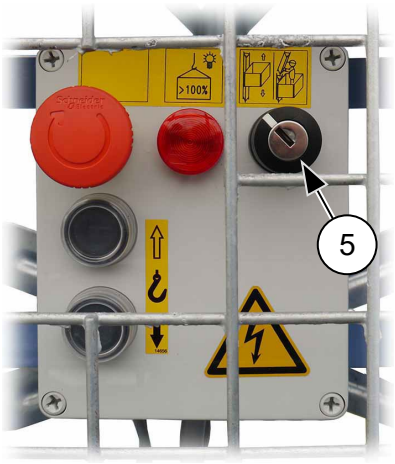


Fig. 7: Activating the operating controls

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

4.2.1 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 assembly guard is lowered.
- 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.

4.3 Operation/function

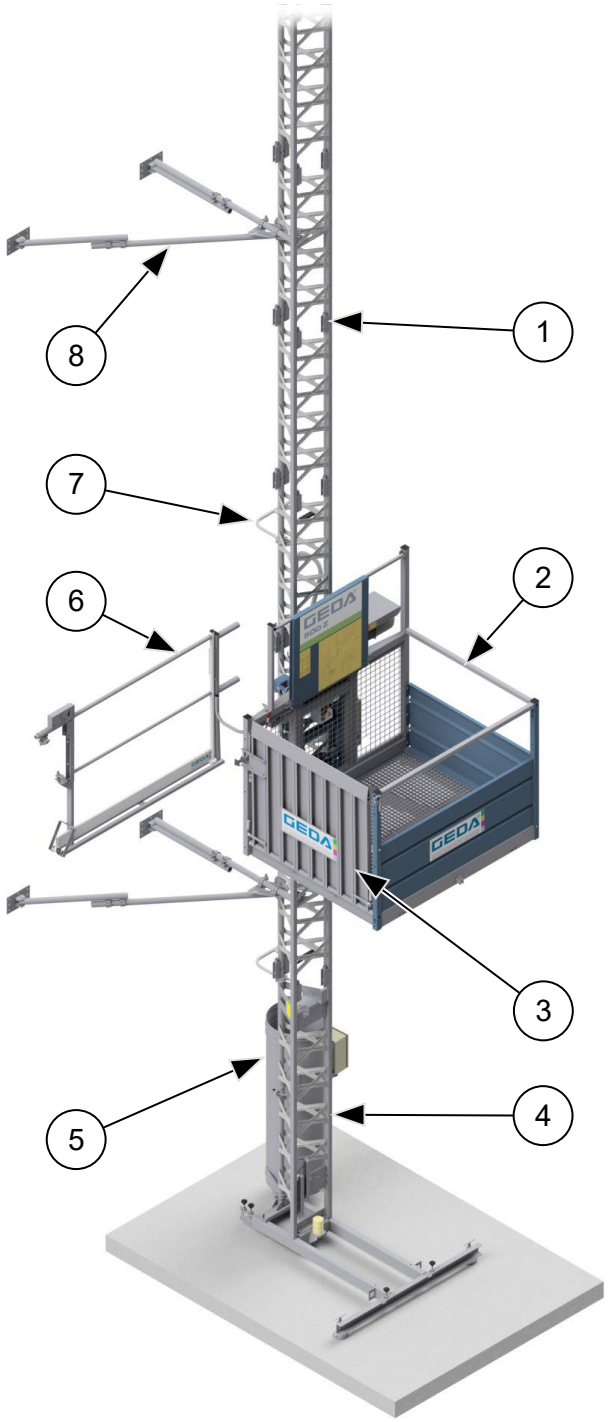


Fig. 8: Overview

1	Mast section	5	Cable bin
2	Platform	6	"ECO+" landing level safety gate
3	Platform access (ramp)	7	Trailing cable guide
4	Base mast with foot section	8	Mast bracket

4.3.1 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.

4.3.1.1 Cordon

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

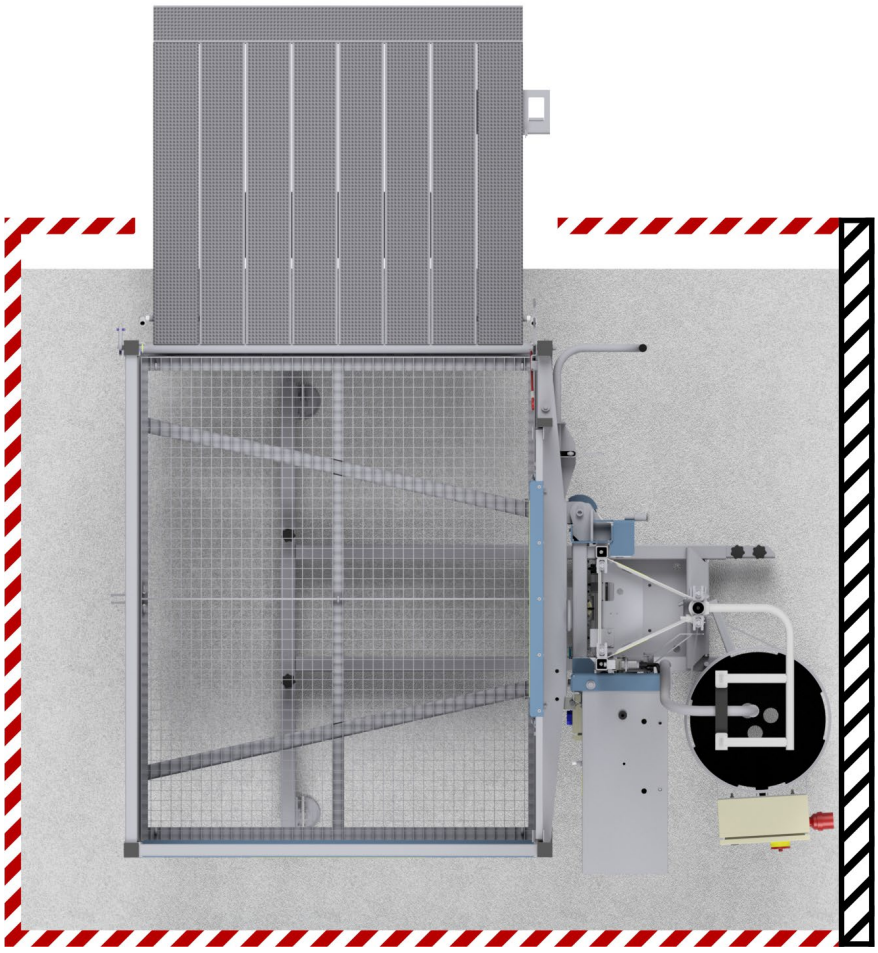


Fig. 9: Cordon

Height = approx. 1.10 m

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

4.3.2 Platform access ramp

The platform access at the ground station is secured with a high ramp. This ramp can be used to load the platform.

Opening

- ➢ Push the ramp (1) inwards with one hand.
- ➢ Unlock the interlock hook (2).
- ➢ Carefully lower the ramp.

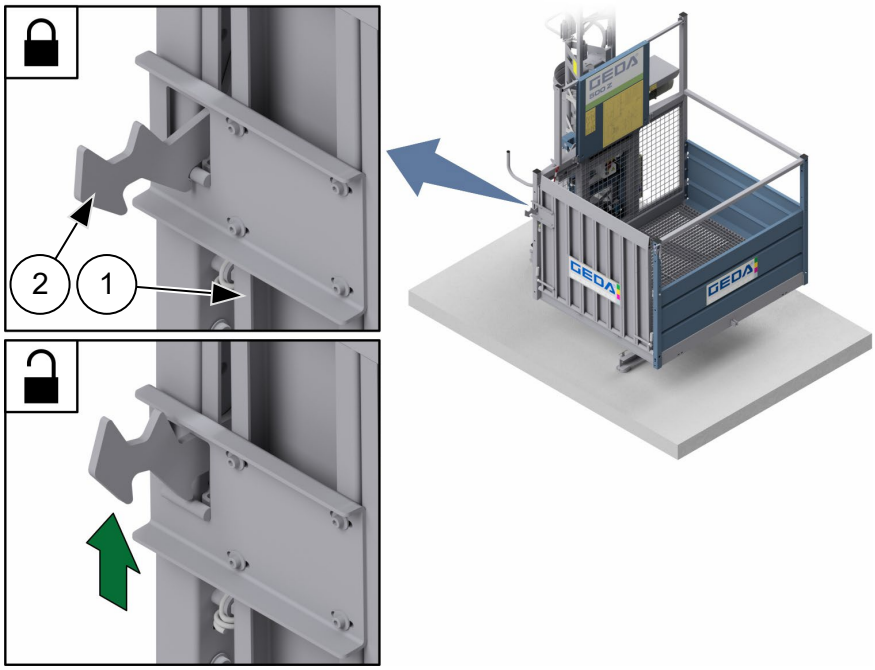


Fig. 10: Ramp lock

Closing

- ➢ Close the loading ramp (1) and push inwards until the interlock hook (2) has engaged twice.

4.3.3 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.

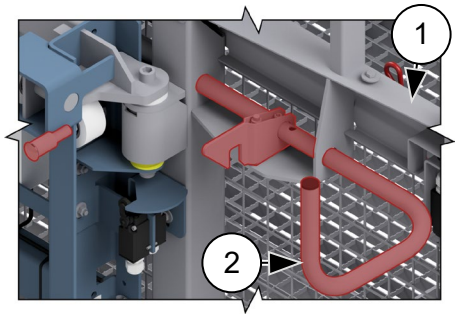


Fig. 11: Swivel lever

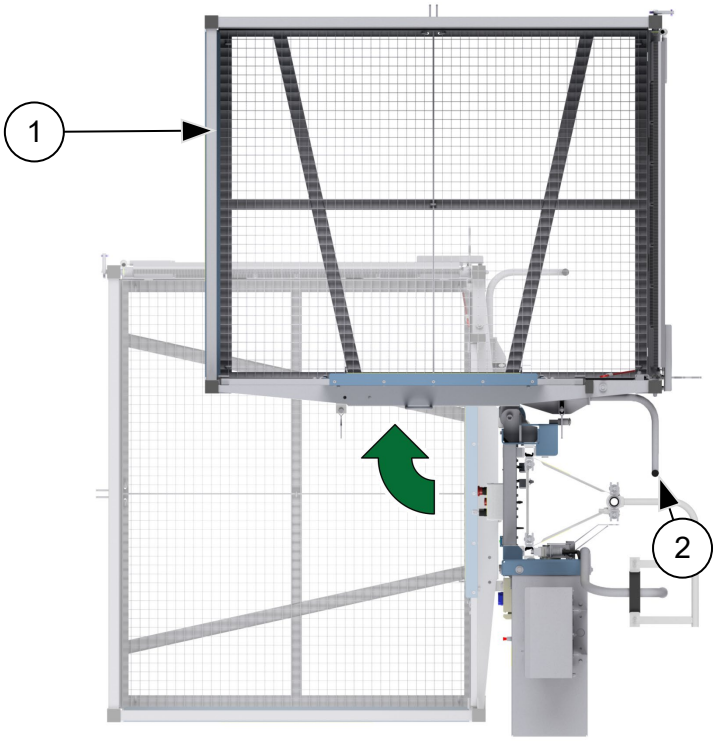


Fig. 12: Swivelling the platform

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!

4.3.4 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.

4.3.4.1 Landing level safety gate ECO +

Fig. 13: Landing level safety gate "ECO+" no. 39700

➢ 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.

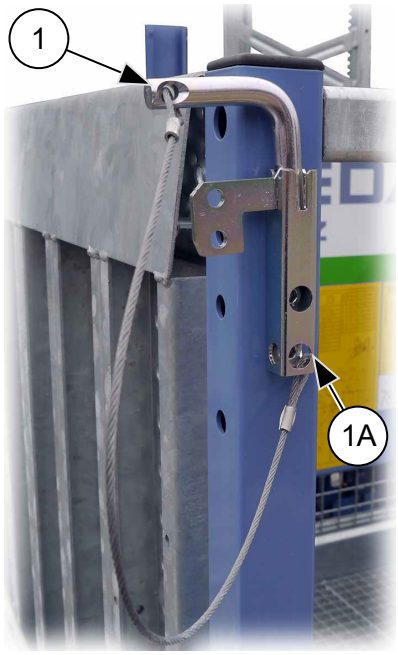


Fig. 14: Key for the landing level safety gate

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

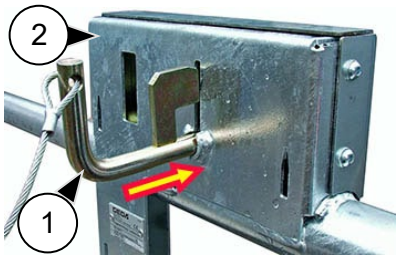


Fig. 15: Inserting the key into the lock

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

➢ Push open the sliding door (2A).

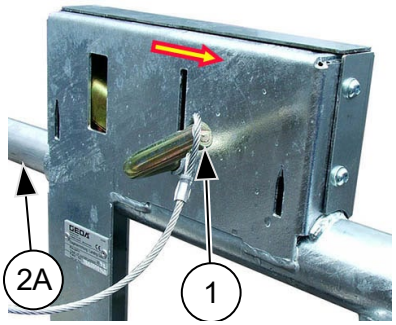


Fig. 16: Unlocking the landing level safety gate

➢ 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.

4.3.5 Controls for normal operation

4.3.5.1 Functional description

- The lifting speed of the platform is approx. 24 m/min.
- After switching on the main switch, the green control light on the ground station switch box indicates readiness for operation.
- Operation is carried out using the ground control (manual control) outside the hazard area – or from the electric modules of the landing level safety gates when above the lower safety area.
- 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.
  Further travel from the landing level limit switch is not possible in either direction.
- The lower safety area is specially secured.
  - Travel in this area is only possible using the dead man's control.
  - When descending, the platform stops at the lower safety area.
  - Within this range, the platform can only be operated with the ground control/manual control.
  - A warning sound is emitted when travelling **UP** and **DOWN.**
- The platform openings (ramp and guard assembly) 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. If the load capacity is exceeded, this switches off travel movement in both directions and the red control light on the platform control illuminates.
- Assembly of the material hoist also includes the safety devices for the loading and unloading points (landing level safety gate).

4.3.5.2 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.

In the lower safety area (approx. 2 m), the platform can only be moved with the ground control/manual control and a warning signal will sound during up/down travel.

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)

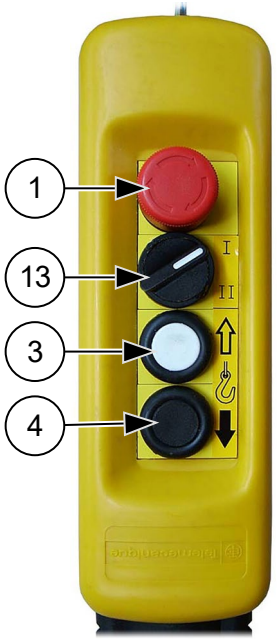


Fig. 17: Ground control/manual control (position I)

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)

Ground control/manual control

1 **EMERGENCY stop** button

3 **UP** button

4 **DOWN** button

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

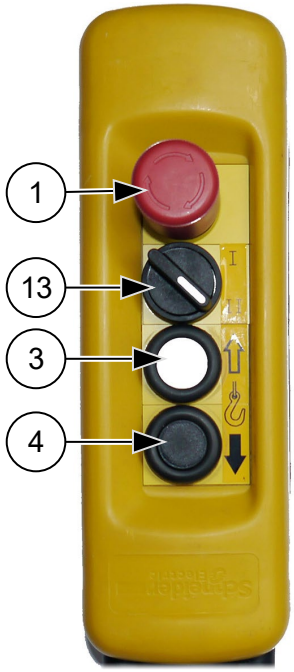


Fig. 18: Ground control/manual control (position II)

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.

4.3.5.3 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

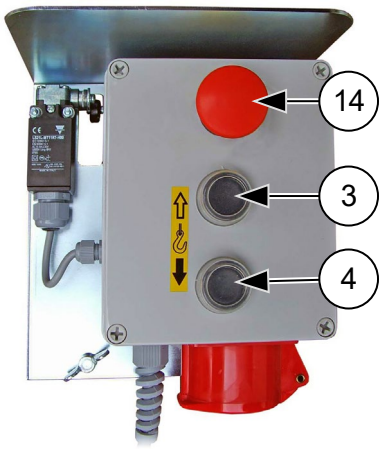


Fig. 19: Electric module for landing level safety gate

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

4.3.6 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 assembly or maintenance, operation is only possible from the platform using dead man's control. The platform only operates 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).
  - → For confirmation, the green control light on this switch box lights up.
- Turn the key switch (5) on the assembly control to the vertical position (assembly position).
  - → In this position, the key cannot be removed.
  - ✓ The control in the platform for assembly or maintenance is active.

1 **EMERGENCY STOP** button
3 **UP** button
4 **DOWN** button
5 **Key switch** for the operating mode
8 **Indicator lamp** for overload

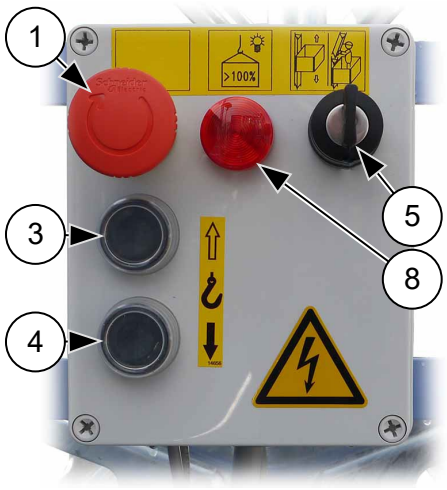


Fig. 20: Activating the assembly control

Travelling UP

➢ Press and hold the **UP** button (3).

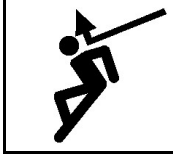
✓ The platform moves only while **UP** button (3) is pressed and is stopped at the mast end by the overrun protection.

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.

4.3.7 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. 21: 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.

4.4 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. 22: Main switch secured

4.5 Equipment

4.5.1 Overrun protection

Before the drive pinion moves out of the gear rack (1) (e.g. during assembly), the proximity switch (2) switches off.

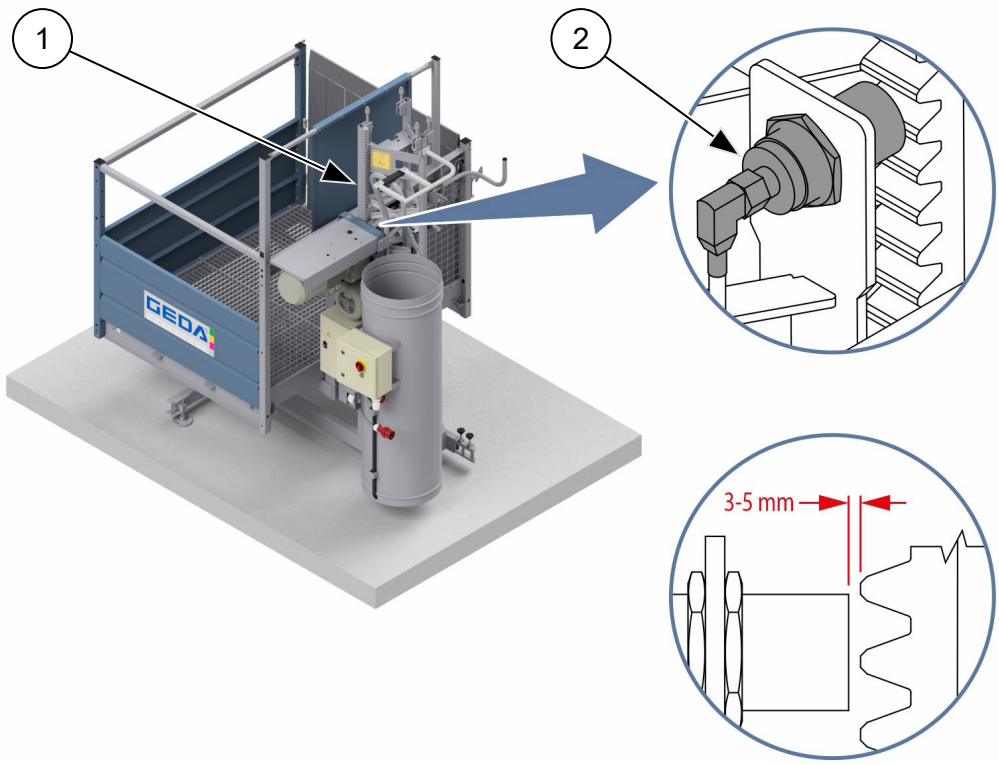


Fig. 23: Overrun protection

The correct distance from proximity switch to gear rack is 3 - 5 mm.

4.6 Accessories

4.6.1 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.

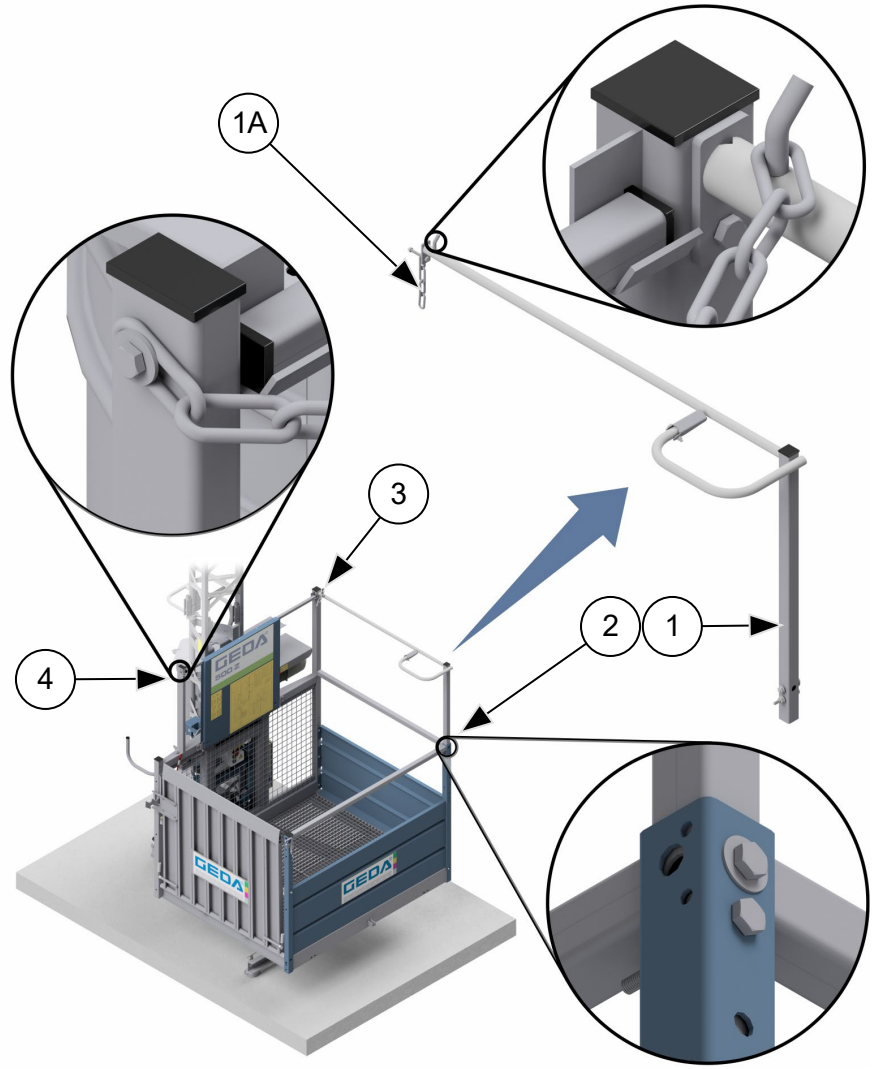


Fig. 24: Push-in frame for scaffolding parts

Installation

- Remove the plastic cap from the corner post (2).
- Remove the screws on the cross connections and place the push-in frame (1) into this corner post.
- Use the previously removed fasteners to attach the post of the push-in frame.
- 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).
- 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).

- ➢ Guide the chain to the corner post (4) and attach to the push-in frame there.
- ➢ Insert the plastic cap into the corner post again.

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

4.6.2 Automatic lubrication device

The lubrication device automatically lubricates the gear rack during travel, as long as there is sufficient grease in the grease reservoir.

The refill intervals and the refilling process are described in the Maintenance Manual for the machine.

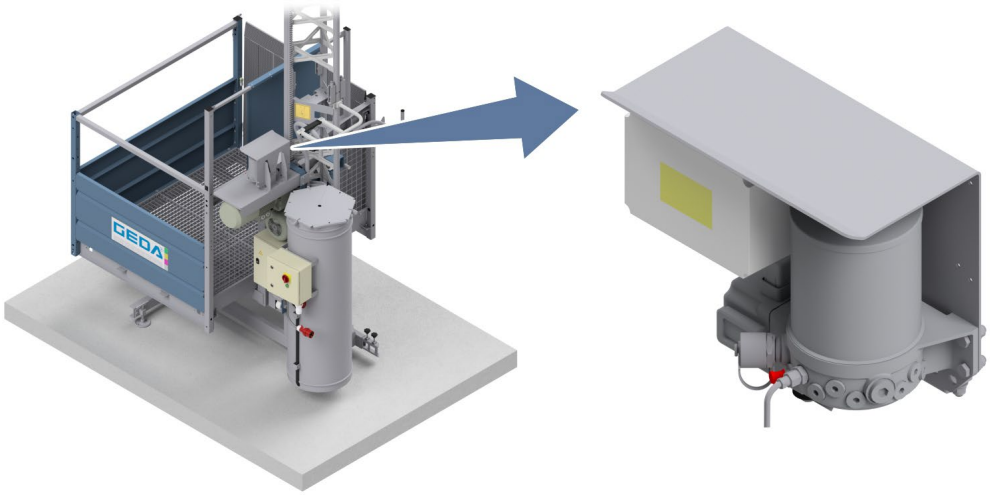


Fig. 25: Lubrication device

4.6.3 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. 26: Cable bin cover

4.6.4 Operating hours counter

(option)

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

Fig. 27: Operating hours counter

The switch box must be opened to read the counter.

4.6.5 1.10 m base enclosure with barrier

With use of the base enclosure, the 500 Z meets the safety requirements specified in the standard.

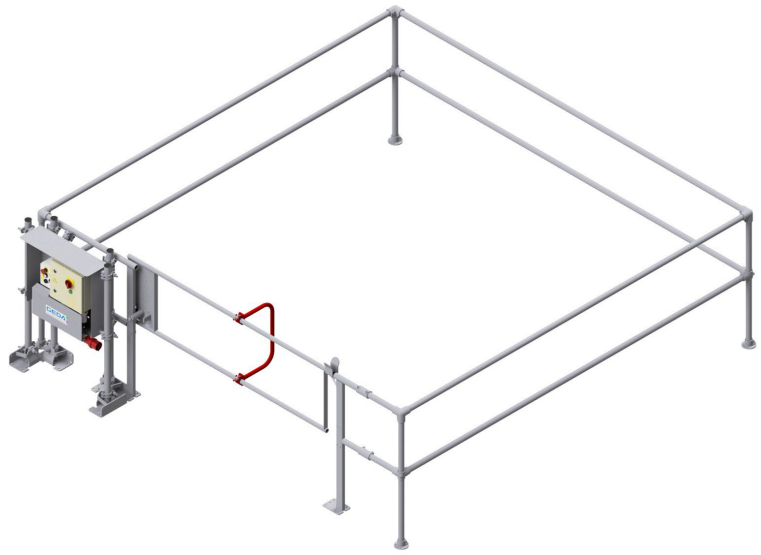


Fig. 28: 1.10 m base enclosure with barrier

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!

4.6.6 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.

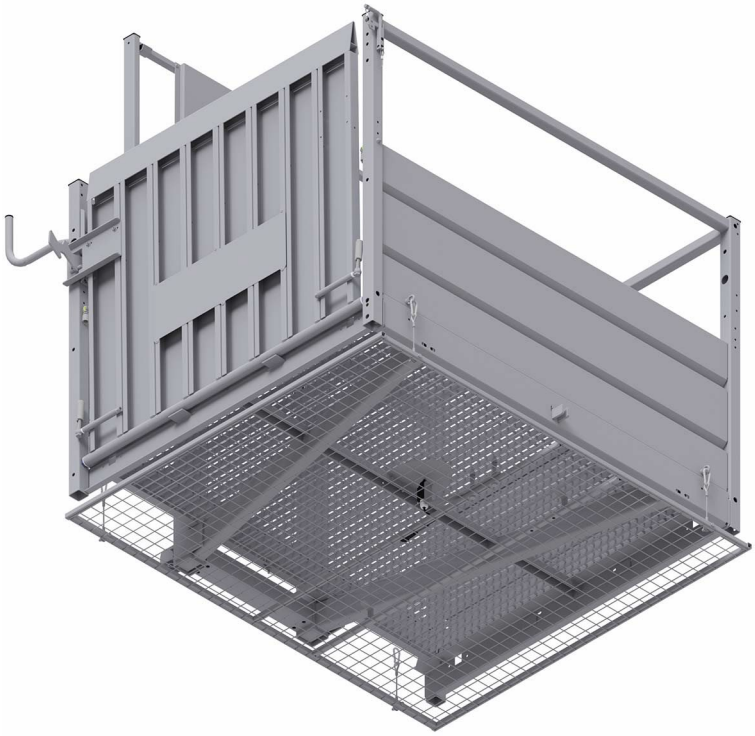


Fig. 29: Underrun protection

4.6.7 Cold package

(option)

The 500 Z can be used down to a temperature of -20 °C. In countries where work is also carried out at lower temperatures, installation of a cold package is recommended.

A thermostat in the switch box of the platform switches off upward travel at temperatures below -20 °C.

Fig. 30: Cold package

4.6.8 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. 31: Single axle trailer

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

5 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.

5.1 Fault table

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

Malfunction	Cause	Remedial action
Green control light off		
	Mains plug disconnected	Connect the mains plug
	Main switch off	Switch on the main switch
	Lamp defective	Replace lamp
	Phase failure	Measure the phases
	Incorrect phase sequence	Correct the phase sequence on the mains plug
	Trailing cable unplugged	Plug in the trailing cable
	Fuse in ground station switch box was tripped	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 swivelled outwards	Swivelling the platform in
	Assembly guard plate open	Attach assembly guard plate at the top
	EMERGENCY LIMIT limit switch activated	Refer to “Platform has travelled too high/too low”.
	Safety gear engaged	Release safety gear (refer to chapter 5.2.6 Safety gear has triggered, page 65)
Red control light lights up.		
	Overload protection was triggered	Reduce the load
Platform only moves upwards		
	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
	Clearance for the proximity switch for monitoring the gear rack is too large	Adjust the clearance to the gear rack (3-7 mm)
Platform moved too high (refer to chapter 5.2.3 Platform has travelled too high, page 62)		
	UP limit switch defective	Check/replace UP limit switch
	Fault in the electrical system	Check system

Platform moved too low (refer to chapter 5.2.4 Platform moved too low, page 63)		
	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

5.2 Rectify fault

5.2.1 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.

5.2.2 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. 32: Plug with phase inverter

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

5.2.3 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 5.3.2 Rescue action plan, page 67).

5.2.4 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:

➢ Turn the key switch (5) on the assembly/platform control to the right and hold it in this position.

➢ Then press the **UP** button (3).

✓ Now the platform moves out of the **END** position.

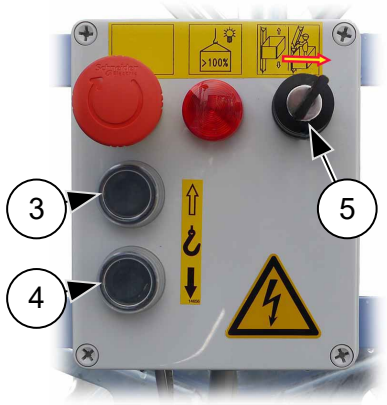


Fig. 33: Moving the platform out of the END position

➢ Release the key switch (5) and the **UP** button (3).

ATTENTION

Damage to the machine from incorrect operation

➢ The **UP** button (3) must be pressed because this switch position bypasses the **EMERGENCY** limit switch. If the **DOWN** button (4) was pressed accidentally, the load platform can come to a hard stop on the foot section.

If this problem occurs repeatedly despite the platform not being overloaded, have the brake checked or adjusted by a qualified person.

5.2.5 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.

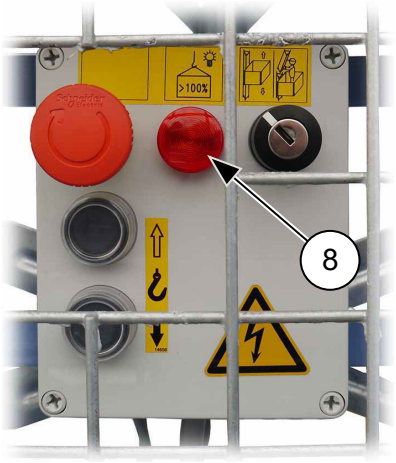


Fig. 34: Overload indicator

5.2.6 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).

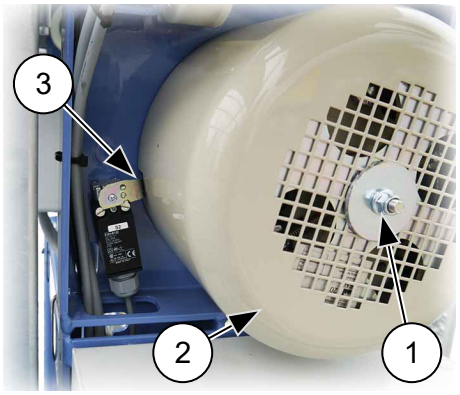


Fig. 35: Resetting the safety gear

- ➢ 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 inspection, which must be carried out by a competent person, is described in the Maintenance Manual.

5.3 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.

5.3.1 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.

5.3.2 Rescue action plan

Action 1: Checking the "ready for operation" control light.

A green control light is installed on the ground station switch box.

- The control light has to light up.

➢ If the control illuminate do not light up, (refer to chapter 5 Malfunctions – diagnosis – repair, page 58).

Action 2: Rescue using EMERGENCY lowering

Triggering of the safety gear

To prevent the safety gear engaging, the brake release lever has to be operated with extreme caution. Once the safety gear has engaged, the platform can no longer be moved and has to be lifted. (refer to chapter 5.2.4 Platform moved too low, page 63)

The EMERGENCY descent is intended only for lowering the platform in the case of a power failure or a defect on the machine.

It must not be used for lowering the platform during operation!

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

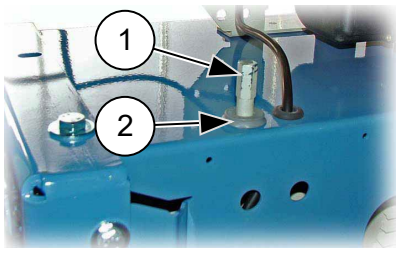


Fig. 36: Bracket for brake release lever

Releasing the motor brake

- ➢ Attach the pull cord to the brake release lever (1).
- ➢ Release the motor brake by carefully pulling on the cord outside of the platform.
  - ✓ The platform glides down.

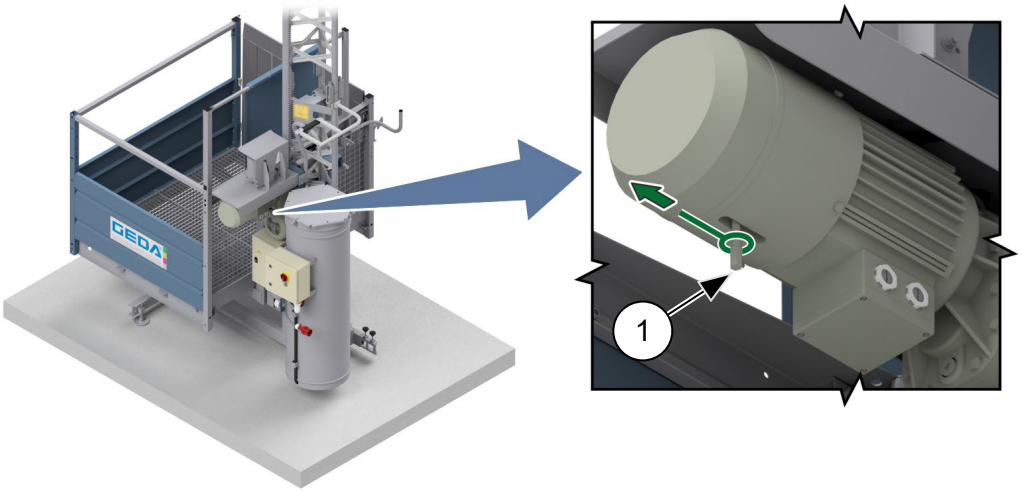


Fig. 37: Releasing the brake

⚠ CAUTION

The brake becomes very hot and loses braking power

- ➢ Interrupt the lowering process for 2 min after every 1 - 2 m at the latest. The length of a mast section can be used for orientation.

- ➢ 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!

It is not possible to lower the platform by releasing the motor brakes if e.g. the safety gear has been triggered.

⚠ WARNING

Risk of injury from defective safety gear

- Now check to ensure that no parts of the drive system are broken, damaged or unserviceable. In this case, the safety gear must **not** be released.
- **The material hoist must be shut down!**

After the emergency:

After emergency lowering, the motor brake has to be checked (e.g. check brake path, see Maintenance Manual).

- Place the brake release lever (1) back in the mount (2)

Action 3: 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!

5.4 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 12)

6 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.

GEDA GmbH
Mertinger Strasse 60
86663 Asbach-Bäumenheim
Tel.: +49 (0)9 06 / 98 09-0
Fax: +49 (0)9 06 / 98 09-50
E-Mail: info@geda.de
Web: www.geda.de

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