Operating Manual

GEDA®
MULTILIFT P22

Construction hoist

For the transport of material and persons

GEDA® ORIGINAL

EC Declaration of Conformity

CE

The manufacturer

GEDA-Dechentreiter GmbH & Co. KG
Mertinger Str. 60
DE-86663 Asbach-Bäumenheim

hereby declares that the machine

Designation:	**Construction hoist for the transportation of material and persons** (for temporary, non-public use by authorised persons)
Type:	**GEDA® MULTILIFT P22**
Year of manufacture:	Refer to identification plate on the machine
Serial No.:	41M.....

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

Directives:		Applied Conformity assessment procedure:
2006/42/EC	Machinery Directive	Appendix VIII
2006/95/EC	Low-Voltage Directive	Appendix IV
2004/108/EC	EMC Directive	Appendix II
2000/14/EC	Noise Emissions Directive	Appendix V

Applied (harmonised) standards:

EN ISO 12100:2010	EN 12158-1
EN 60204-1/32	EN 12159

EC type testing procedure:

Type testing certification		NL 13-400-1001-068-16
European notified test site	0400	LIFTINSTITUUT Buikslotermeerplein 381 1020 MA Amsterdam

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

Asbach-Bäumenheim 02.04.2013

Johann Sailer
(Managing Director)

Table of Contents:

1 General information

1.1 Information about the instruction manual

This operating manual is an essential aid to operating the machine **successfully and hazard-free**.

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.:

- Operating, fault rectification during work, disposal of operating materials and auxiliary supplies,
- assembly, maintenance (servicing, general maintenance, repairs) and/or transport

.

You will see a series of illustrations and symbols whilst reading this manual which are intended to help you navigate through and understand this manual. The different meanings are explained below.

Text display	Meaning
Bold type	Emphasises particularly important words/passages
• List 1	Denotes lists
– List 2	Denotes lists
(brackets)	Item numbers
➢ Instruction	Instruction to personnel. Always given in chronological order

Images
The images used refer to a specific machine model. They may only be a schematic representation of other machine models. The fundamental function and operation is not affected by this.

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

Health and safety symbol
This symbol is found next to all safety instructions where there is a risk of injury or a fatality. Observe these instructions and be very cautious!

Warning level		Consequence	Probability
⚠	**DANGER**	Death / serious injury	is imminent
⚠	**WARNING**	serious injury	possible
⚠	**CAUTION**	minor injury	possible
	CAUTION	tangible damage	possible

Attention note
This is found at points where special information or instructions and restrictions regarding damage prevention are given in order to prevent damage to the equipment.

Note
This is found at points where information is given about using the machine economically or instructions are given regarding correct working procedures.

1.2 Abbreviations

The following abbreviations may be used in the manual.

max.	maximum	Nm	Newton metre
min.	minimum	km/h	kilometres per hour
mins.	minutes	mph	miles per hour
etc.	et cetera	inc.	including
poss.	possible/possibly	if nec.	if necessary
e.g.	for example	d.h.	id est (that is)
ml	millilitre	reg.	regarding
mm	millimetre	RH	relative humidity
°C	degrees Celsius	approx.	approximately
°F	degrees Fahrenheit	Ø	diameter
ft.	feet	®	registered trademark
ft/m	feet per minute		
m/min	metres per minute	©	copyright
in.	inch	TM	trademark
etc.	et cetara	%	per cent
lbs.	pounds	‰	per mille
lbf.-ft	pounds per feet	dB (A)	sound pressure level
kg	kilogram		
l	litre	LWA	sound power level
gal.	gallons	>	greater than
kip.	kilopound	<	less than
		±	plus or minus

1.3 Information about the machine

Machine	**GEDA MULTILIFT P22**
Year of manufacture:	See identification plate on the machine
Serial number:	41M00_____ 43M00_____ 46M00_____
Documentation version:	08/2013

1.4 Name and address of the manufacturer

GEDA Dechentreiter GmbH & Co. KG
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 Dechentreiter GmbH & Co. KG Northwest branch Marie-Curie-Strasse 11 59192 Bergkamen-Rünthe Tel. +49(0)2389 9874-32 Fax. +49(0)2389 9874-33	GEDA Dechentreiter GmbH & Co. KG East branch Ernst-M.-Jahr Strasse 5 07552 Gera Tel. +49(0)365 55280-0 Fax. +49(0)365 55280-29
USA Subsidiary	**Russia Subsidiary**
GEDA USA, LLC 1151 Butler Road USA 77573 League City, Texas Tel. +1(713) 621 7272 Fax. +1(713) 621 7279 Web: www.gedausa.com	GEDA RUS, LLC Yaroslavskoe shosse 42 129337 Moscow Russian Federation Tel. +7(495) 663 24 48 Fax. +7(495) 663 24 49 Web: www.geda-ru.com
Turkey Subsidiary	
GEDA MAJOR IS VE INSAAT MAKINALARI SAN. TIC. LTD. STI. Semsettin Günaltay Cad. No:224 A Blok K:2 D:5 Tüccarbasi/Erenköy TR-34734 Istanbul/Turkey Tel.: +90 (216) 478 2108 Fax: +90 (216) 467 3564 Web: www.geda.com.tr	

1.5 Notes about the author and industrial property rights

All documents are protected in terms of copyright law. Dissemination and reproduction of documents (even parts thereof), as well as recycling or communication of their contents are prohibited unless expressly permitted in writing.

Violations are an offence and incur an obligation to pay compensation. All rights to exercise industrial property rights are reserved by **GEDA**.

1.6 Instructions for the operating company

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

The operating company 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 binding **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 working safely and competently must also be observed.

The operating company must make sure that operating personnel wear **personal protective gear** as appropriate to the local conditions.

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

The operating company/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 equipment, as well as welding onto load-bearing components.

Any **replacement and wear 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 responsibilities of personnel in respect of operating, servicing and repairs must be clearly established! The legally permissible minimum age must be observed!

1.7 Intended use

The **GEDA Multilift P22** is a gear rack hoist for temporary use on construction sites,

- that must only be operated by site personnel who have been instructed and are authorised.
- Determined for the transport of material and persons who can exit the car at installed and secured exit points (landing level safety gates)
- which may only be operated at wind velocities of up to 72 km/h (≈ wind force 7-8 according to the Beaufort scale).

– at higher wind speeds the car must be parked on the ground and taken out of operation .

Observe and adhere to the data given in Chapter 3.5 "Technical Data".

Any other use or any use going beyond this is not considered proper use.
The operating company/user of the machine is solely liable for any damage resulting from such action. This applies equally to any arbitrary changes to the machine.

Intended use includes

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

☞ **The GEDA Multilift P22 is suitable for temporary use on construction sites. Any other locations or intended uses require written approval from the manufacturer.**

1.7.1 Requirements of assembly personnel

The machine may only be assembled, operated and maintained by competent persons who, based on their training, knowledge and practical experience, can guarantee proper handling of the machine and who are aware of the risks associated with the hoist. These persons must be appointed to the tasks of installation, dismantling and maintenance by the operating company.

1.7.2 Operating personnel

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

- have been appointed by the operating company.
- have been appropriately instructed and informed about the risks.
- Be acquainted with the operating manual.
- Observe national regulations.
- Damage or faults are to be reported to the operating company immediately.

1.7.3 Improper use

- The **GEDA MULTILIFT P22** is not conceived for permanent assembly.
- The **GEDA MULTILIFT P22** must not be assembled free-standing (without anchoring).
- Persons that have not been instructed about the machine, not familiar with the operating manual or children must not operate the **GEDA MULTILIFT P22**.

Consequences of improper use of equipment

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

2 General safety information

The machine has been designed and built according to the latest standards of technology and recognised safety-related 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 used improperly,
- Is assembled, operated and serviced inappropriately.

Attached notices and warning signs must be observed!

Consequences of not complying with safety instructions
Non-compliance with safety instructions can result in danger both for personnel as well as for the environment and the machine. Non-compliance can lead to the forfeiture of any damage compensation claims.

2.1 Residual risks

There are still residual risks remaining from handling the machinery even when all safety conditions are complied with.

Everyone 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.

Caution

- Do not remove safety stickers; replace any safety instructions that have become illegible.
- Hazards when working on the electrical system.
- Danger from improper operation (non-compliance with the operating manual).
- Hazard due to toppling caused by improperly secured load.
- Danger from operating a machine that has not been maintained correctly.

2.2 Safety instructions for operating personnel

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

The machine may only be used in a technically fault-free condition, as well as **in accordance with the intended use, in a safety conscious manner aware of the hazards**, and while observing the operating manual! In particular rectify faults immediately that could impair safety!

In addition to this, the machine may only be operated when all **safety features are present and functioning**!

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

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

The operator is obliged to wear **personal protective equipment** as appropriate to the local conditions.

Switch-on and shutdown procedures, including emergency shutdown, 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 features.

2.3 Safety instructions for transport

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

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

Never step **under suspended loads**!

Only use **suitable, standard and checked lifting gear** forklift truck, crane) and slinging gear (round slings, lifting straps, slinging ropes, chains) for transportation to the location of installation.

When selecting hoisting equipment, always take into account the **maximum suspended loads!**

Please refer to the dimensions and weights in the technical specifications chapter (3.5).

Only carefully load and transport equipment that has been **disassembled, packaged and lashed**.

Always ensure that the machine is transported **without being knocked or jolted**.

Observe the **pictograms on the packaging**.

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

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

2.4 Safety instructions for operation

Only operate the machine, under consideration of the operating manual, **when it is fully serviceable and in a safety and hazard conscious manner**.

If **work is interrupted**, switch off the machine at the **main switch** and secure it with a padlock against switching on.
Fundamentally, the machine must be **secured against unauthorised use** (disconnect from power)!

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

Shutdown and lower the machine when wind speeds are >72 km/h (45 mph). (Wind force 7-8, wind breaks branches off trees, makes walking very difficult!)

No one is allowed to stand under the machine.
Do not store any objects under the machine.

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

Persons being transported must comply with the **instructions given by the car operator**, in particular, they must not step over material that is being transported.

2.5 Safety instructions for servicing, maintenance and troubleshooting

Operating personnel must be **informed** about how to carry out special work and maintenance work before they start.

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

As required, the **maintenance area** must be extensively **cordoned off**!

Fundamentally, before any maintenance work on the machine
- Unload,
- Switch off at the master switch.
  (Wait five minutes until the frequency converter has discharged.)

All **servicing and maintenance work is only permitted when the main switch turned off**. Manual intervention while the machine is running can lead to serious injury and is therefore prohibited. If it is necessary to **turn the machine on during** such work, then this must only be done while complying with **special safety measures**.

☞ **For further instructions about maintenance / maintenance intervals / servicing, refer to the maintenance manual.**

If the machine has been completely shut down for these tasks, it must be secured against switching on unintentionally:
- **Operate the Emergency STOP button,**
- **Lock the main switch with 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 imperative for carrying out **servicing and maintenance tasks**.
When carrying out maintenance work at greater heights, a fall-protection device must be worn!
Keep all handles, railings and the car free from dirt and contamination.
When working below the car, it must be secured using appropriate means (activate the setting mechanism).

Before starting servicing/repair tasks **clean** the machine, in particular connections and screw connections, from oil, operating fluids, contamination and maintenance products. Abrasive cleaning agents must not be used. During servicing and maintenance work, **loosened screw connections** must always be **tightened** using the necessary **torques**!

Do not change, remove, bypass or bridge safety devices.
If it is necessary to **remove safety devices** during servicing and repairs, the safety devices must be installed and **checked** immediately after completion of servicing 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 notices and warning signs, as well as safety labels.

Ensure that auxiliary supplies, as well as replaced parts, are disposed of safely and in an eco-friendly manner (also refer to Chapter 6)

☞ **The aforementioned safety measures apply equally for work in the context of eliminating faults.**

2.6 Safety whilst working on the electrics

If there are faults on the electrical system of the machine, it must be immediately shut down using the main switch and secured with a lock!

Work on the electrical equipment of the machine must only be carried out by **qualified electricians** working in accordance to electrical engineering regulations! Only professional electricians may access the machine's electrics and carry out work on it. **Always keep the switch boxes closed** as soon as 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**. Operating fluids that have 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 must 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. Only use insulated tools!

Only original fuses with the stipulated amperages may be used! Never repair or bypass defective fuses. Only replace fuses with fuses of the same type.

Changes to the control program can impair safe operation.
All program changes require the manufacturer's approval.

During repairs, make sure 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 made smaller by insulation).

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

2.7 Tests

The **GEDA MULTILIFT P22** is a machine in accordance with the EC Machinery Directive 2006/42/EC. A copy of the conformity declaration is reproduced in this operating manual.

Checks after assembly → Assembly instructions

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

- Dynamic test with 1.25 times the safe working load.
- Electrical tests according to EN 60204
- Function tests.

Recurring inspections:
(Also refer to the maintenance manual)
Inspections prior to commissioning, recurring inspections and intermediate inspections must be carried out according to national regulations.

☞ **GEDA recommends that you carry out a recurring check on an annual basis. In the case of increased use and strain (e.g. multi-shift operation), carry out inspections at shorter intervals.**

The results of the recurring check can be recorded in writing in the appendix of this maintenance manual.

3 Technical description

3.1 Description of function

The **GEDA MULTILIFT P22** is a gear rack hoist assembled vertically, that is temporarily used on construction sites for the transportation of material and a max. of 22 persons.
The car can be entered and exited at secured landing points.

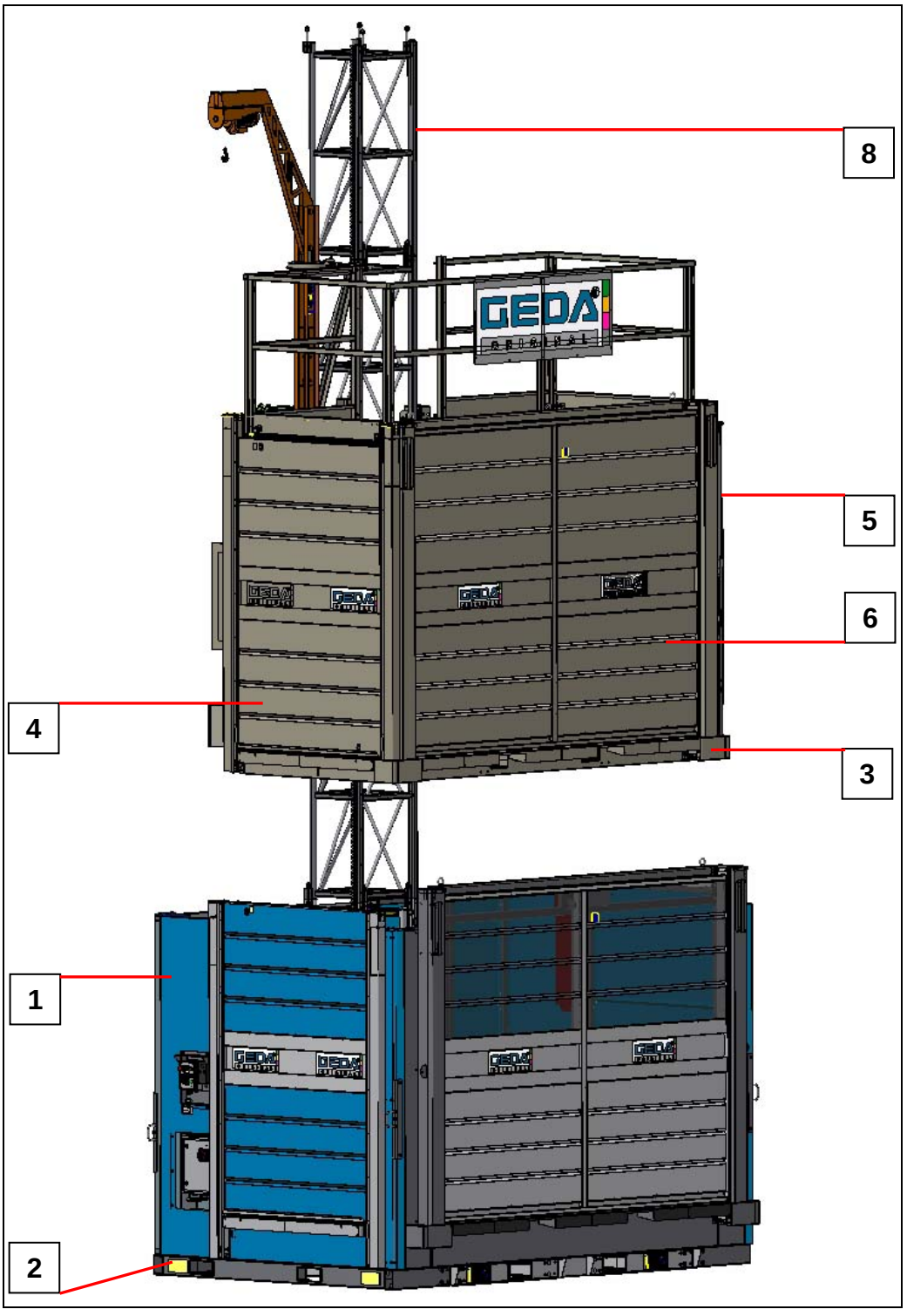
- The hoist is equipped with a base enclosure, 2.50 m high.
- The base unit can be extended with 1.5 m long mast sections up to a max. installation height of 200 m.
- The machine has an overload device that disables movement in both directions if the payload is exceeded.
- Locked, sliding doors are located on the cage. The enclosure door, landing level door and car door must be opened individually to enter the car. A car door can only be opened when the car is stationary in front of the appropriate enclosure or landing-level safety door.
- Complete assembly of the construction hoist includes the safety equipment for the loading and unloading points (landing level safety doors).
- Each stop position above has a landing level safety door with manually operated sliding doors and double access doors which are locked. The landing level safety doors can only be opened when the car is stationary at this stop position.
- The car can only be started when the enclosure door, all landing level doors and the car doors are closed.
- The construction hoist is switched on at the key switch at the ground control.
- Contact with the ground station is possible through the intercom in the car.

The control can be operated from the car, the ground station or the landing levels.

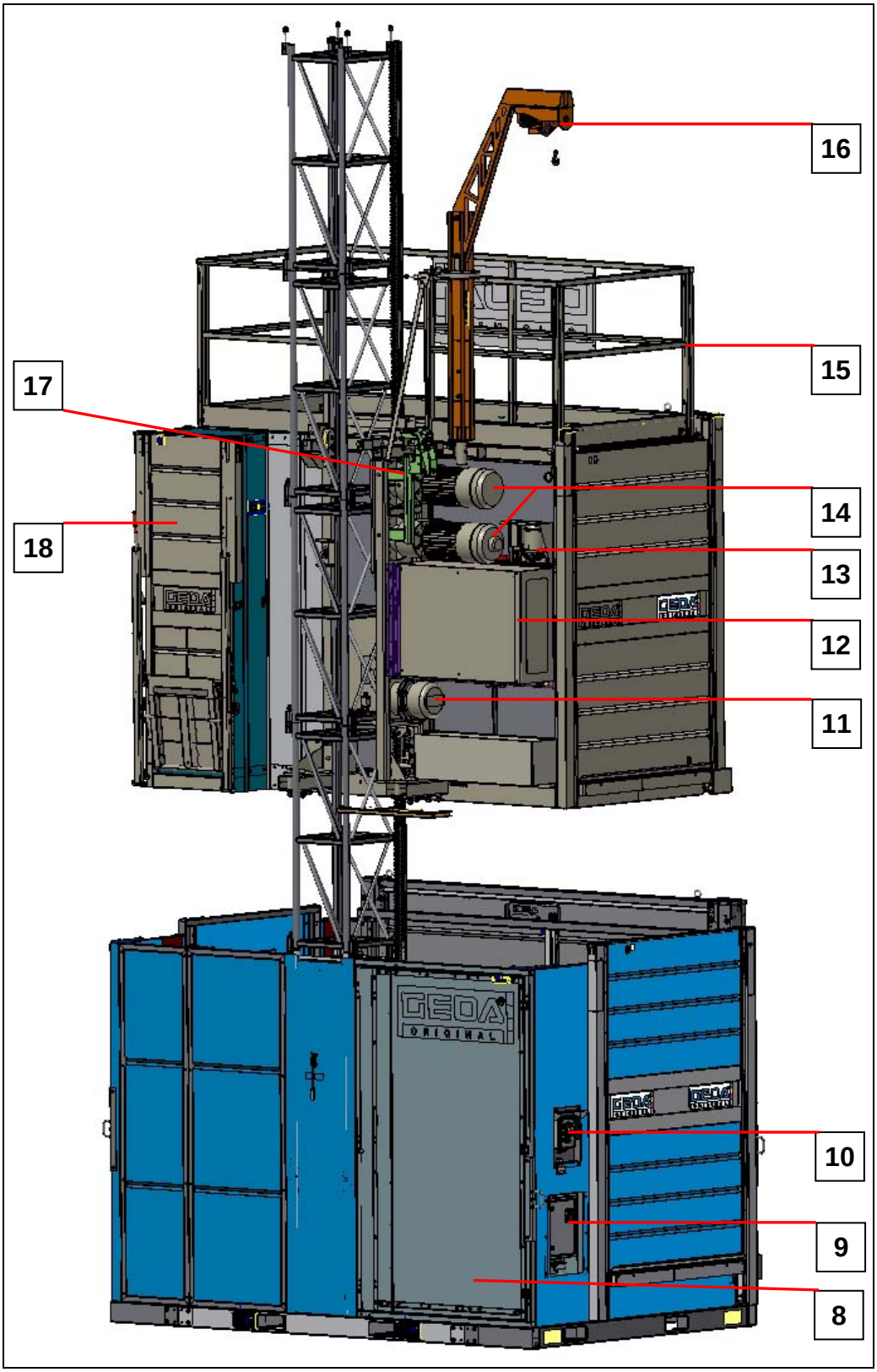
Exceptions:
During assembly, only the assembly control is active, all other control points are disabled, only the EMERGENCY STOP button functions.
For the drop test, only the drop-test control is active, all other control points are disabled, only the EMERGENCY STOP button functions.

The **MULTILIFT P22** can be assembled with or without clearance to the wall, depending on which design of sliding door (with or without ramp) is installed on the landing side of the car. The car door also dictates which landing equipment (with sliding door or double doors) must be used.

3.2 Machine equipment



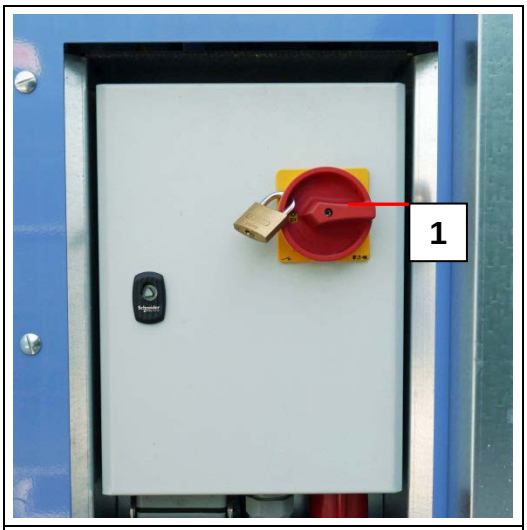
1 = base enclosure 2.50 m with sliding doors
2 = Foot section with base mast
3 = Car
4 = Sliding door "A"-side of car
5 = Sliding door "B"-side of car
6 = Sliding door "C"-side of car (Option)
7 = Mast section 1.5 m



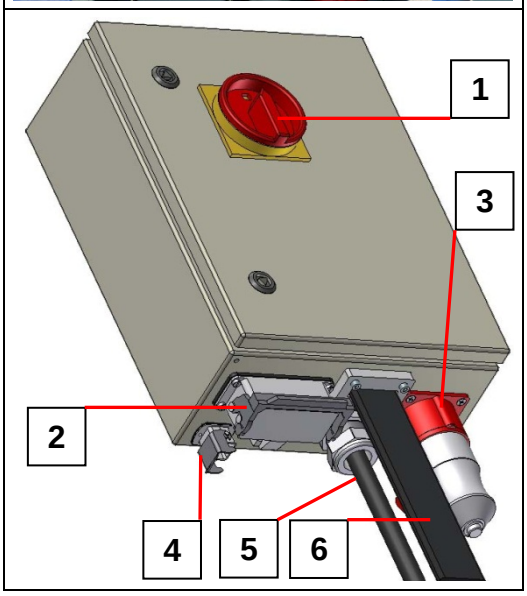
8 = Cable box for flat cable
9 = Switch box Ground station
10 = Ground control
11 = Safety gear
12 = Car control switch box
13 = Automatic lubrication device
14 = Drive motors
15 = Railing
16 = Assembly crane (Option)
17 = Cable holder
18 = Sliding door with ramp "D"-side of car (Option)

3.2.1 Ground-station switch box

The main switch (1) is on the ground-station switch box.



1 = Main switch

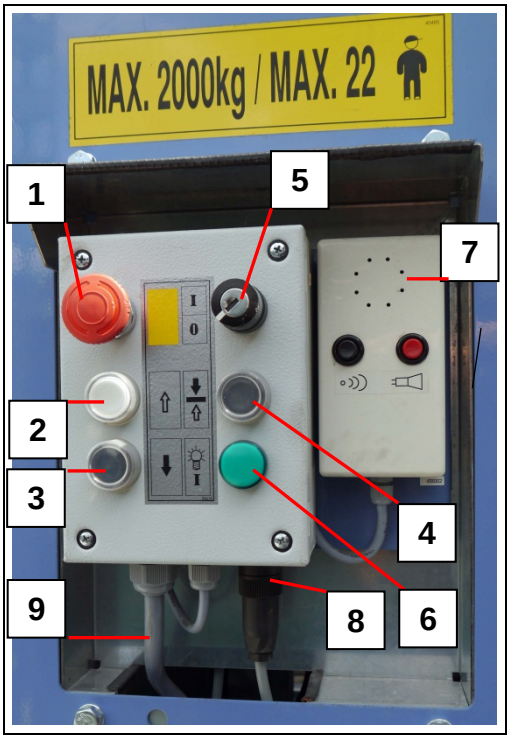


2 = Socket [16-pole] for ground control
3 = Socket [red / 7-pole] for landing equipment (or dummy plug during assembly)
4 = Socket [4-pole] for setting mechanism
5 = Mains supply line
6 = Travelling cable

3.2.2 Control at the ground station

1 = **EMERGENCY STOP** button
2 = **UP** button
(upwards to the highest landing)
3 = **DOWN** button
(downwards to the ground station)
4 = **Landing stop button**
(car stops at the next landing)
5 = Key switch, construction hoist
ON/OFF
6 = Indicator light ready for operation
(illuminates when the key switch (5) is switched on)

7= Voice module

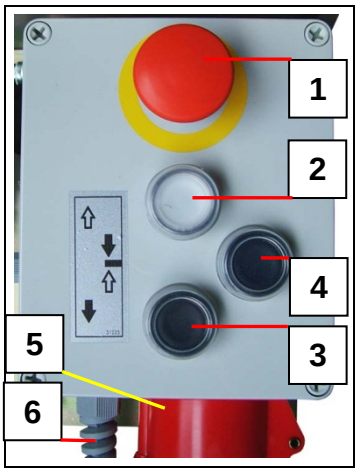


8 = Socket [black / 7-pole] for monitoring the enclosure sliding door
9 = Supply line with plug [16-pole] to the ground-station switch box.

3.2.3 Control at the levels

Using the **EMERGENCY STOP** button (1), the car can be stopped at any time.

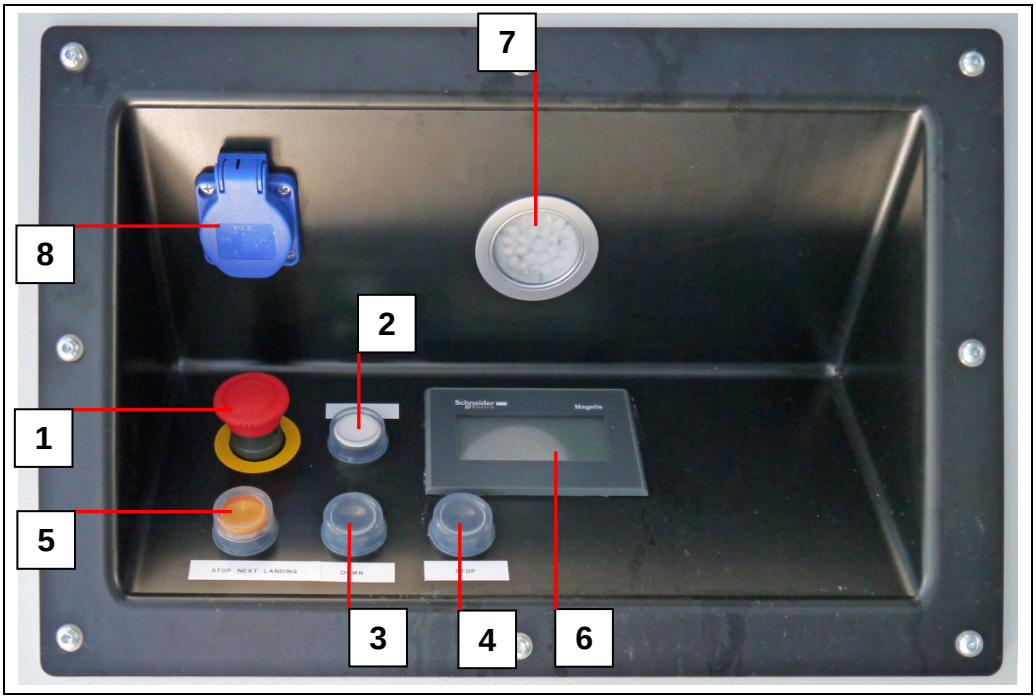
1 = **EMERGENCY STOP** button (does not engage)
2 = **UP** button
3 = **DOWN** button
4 = **Landing stop button**
(car stops at the next landing)



5 = Socket [red / 7-pole] for the landing control above
(or dummy plug at the highest landing control)
6 = Supply line with plug [7-pole] for the next lower landing control.

☞ **The dummy plug is always changed over from the ground-station switch cabinet to the top landing control.**

3.2.1 Car control "Stop at the next landing"



1 = **EMERGENCY STOP** button

2 = **UP** button

3 = **DOWN** button

4 = **STOP** button

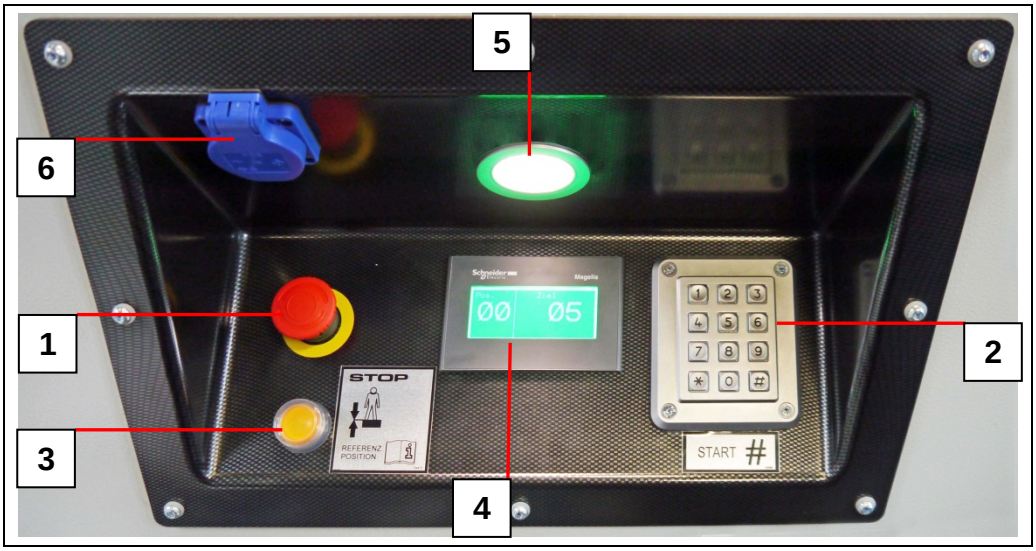
5 = Button with triple function
- **LANDING STOP**
- **Reference run** to the ground station
- Switch on the **EMERGENCY lighting**

6 = Display module for
- Actual position
- Direction of travel
- Error code

7 = **EMERGENCY lighting**

8 = **Operating socket** 230V/50Hz

3.2.2 Car control "Landing selection" (option)



1 = **EMERGENCY STOP** button

2 = Key field
- 0-9 = Landing level selection
- # = **START** button
- * = No function

3 = Button with triple function
- **LANDING STOP**
- **Reference run** to the ground station
- Switch on the **EMERGENCY lighting**

4 = Display module for
- Destination (landing selected)
- Actual position
- Direction of travel
- Error code

5 = **EMERGENCY lighting**

6 = **Operating socket** 230V/50Hz

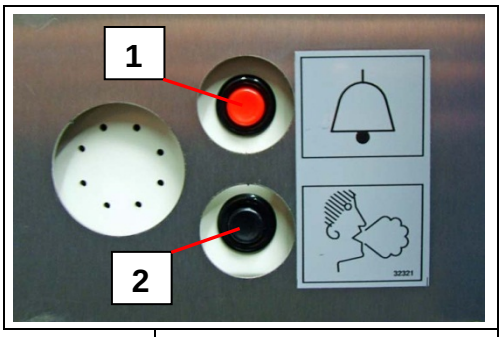
3.2.3 Emergency call system

The emergency intercom comprises of a speech module on the ground control and a speech module at the car control.

If persons are locked in the car, they can contact ground personnel using the intercom system.
The intercom system establishes contact with the ground station.

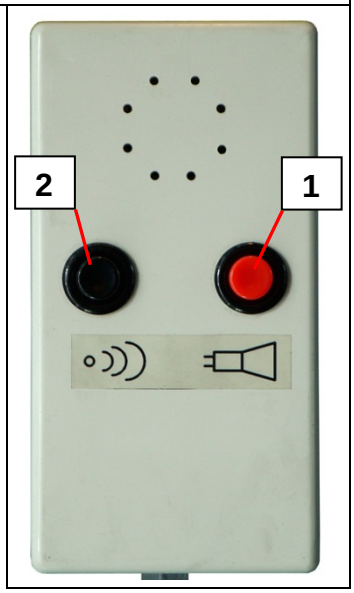
☞ **The intercom system uses mains power when the base unit is connected to the power supply; an internal battery provides power for operation if there is a power failure.**

As operating elements, for each voice module there is a **CALL** button (red) and a **SPEAK** button (black).



To make speech contact

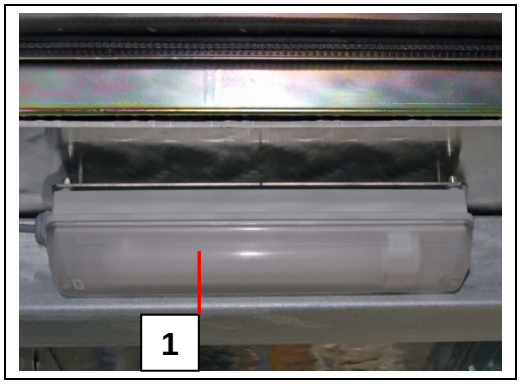
- Press and hold the red **Call** button (1) until the other person answers.
- Press the black **Speak** button (2) to talk with the other person (send your own message).
- After sending your own message, release the black **Speak** button (2) in order to receive a message from the other person.



3.2.4 Lighting

Car lighting

- The car lighting (1) is always on as long as the main switch is turned on.

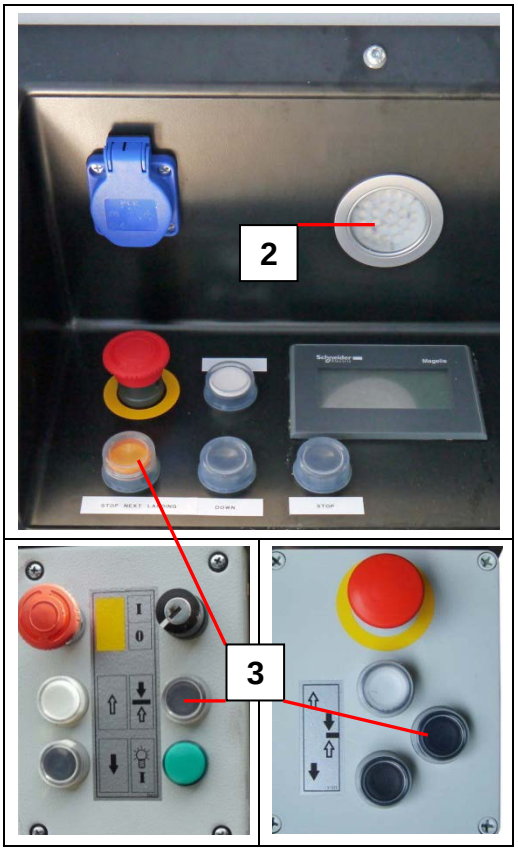


EMERGENCY lighting

If there is not mains voltage (e.g. main switch switched off), the **EMERGENCY lighting** continues to illuminate for approx. 1 hour. If the Emergency lighting has switched off, this can be switched on again.

- Press the button (3).

The **EMERGENCY lighting (2)** continues to illuminate for approx. 1 hour.



☞ **If there is no mains voltage, the EMERGENCY lighting (2) can be switched on at all LANDING STOP buttons (3).**

3.2.5 Roof hatch and ladder

For maintenance, servicing, assembly tasks or for evacuation of persons, the car roof can be accessed by the ladder (1) and roof hatch (4).

DANGER

Danger to life
Fall from the ladder.
Only one person allowed on the ladder at a time.
Always hold on with at least one hand.
Always face the ladder to ascend and descend.
Keep the ladder free of dirt and soiling.

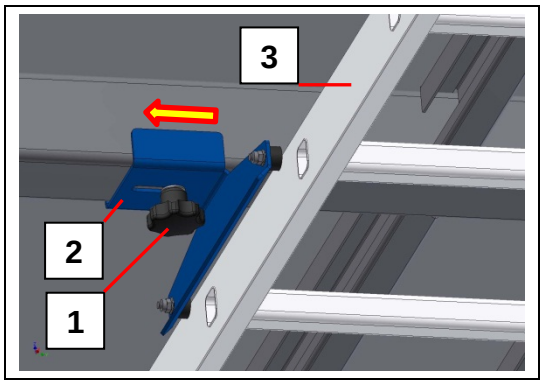
DANGER

Danger to life
Falling from the car roof.
Only access in an EMERGENCY or for maintenance / servicing tasks.

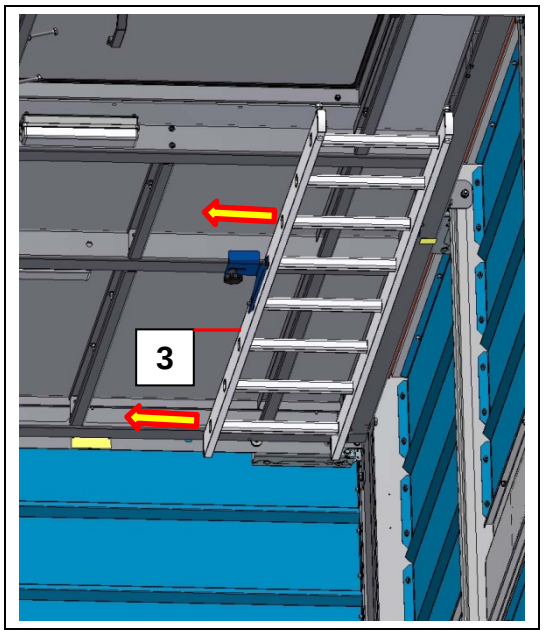
Place the ladder at the roof hatch

- Release the screw on the star handle (1) and pull the sliding bracket (2) out of the ladder (3).

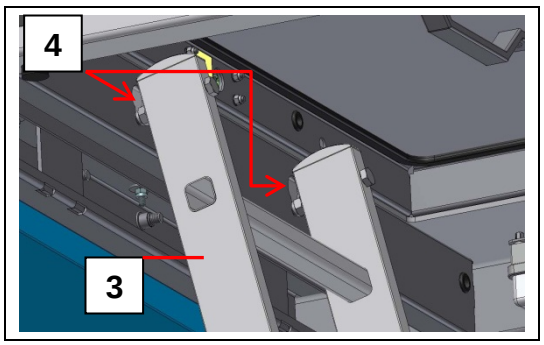
Firmly hold the ladder!



- Pull the ladder (3) out of the fixed brackets and place at the roof hatch.

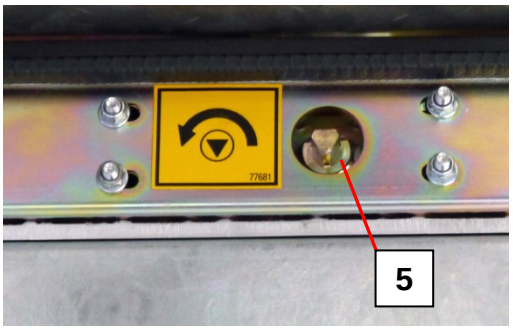


- Hook the screws of the ladder on the roof frame (4), below the roof hatch.



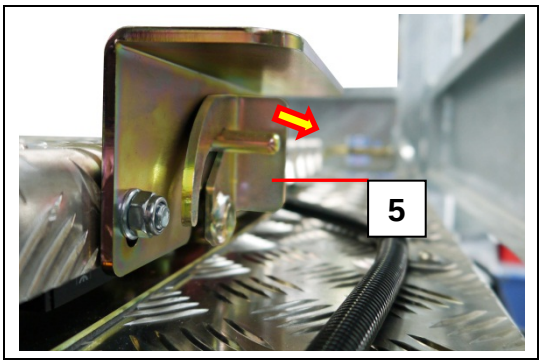
- Remove the triangular wrench from the document and tool box in the car and insert it above the triangular bolt of the roof hatch lock (5)

- Unlock the lock (5) by turning the triangular wrench anti-clockwise.

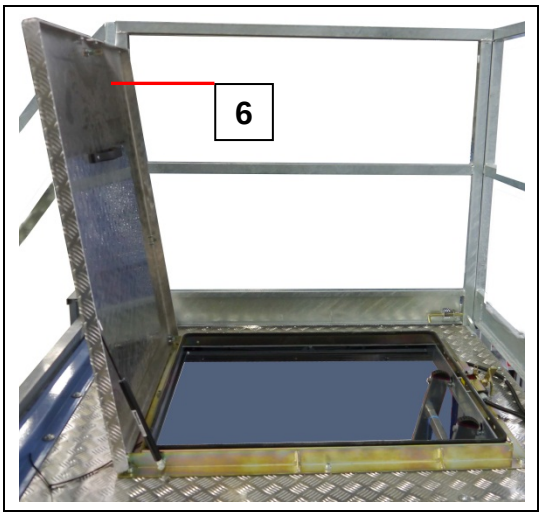


☞ **The roof hatch can be opened from the outside without a tool.**

- Pivot the lock (5) towards the roof.



- Open the roof hatch (6) and, if necessary, secure it against shutting using appropriate measures, e.g. by a strong wind.

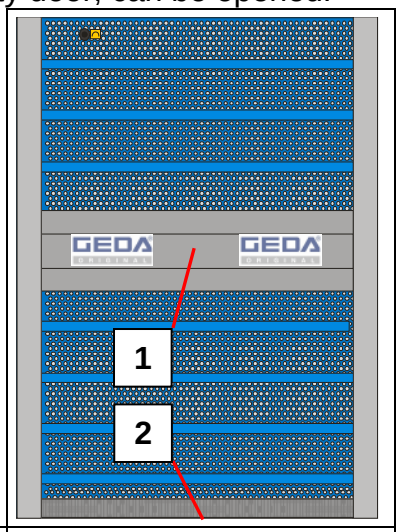


3.2.6 Car / enclosure doors

The sliding door can only be opened when the car (stopped by the landing limit switch) is stationary in front of the landing equipment or stopped on the ground at the ground station (stopped from the down limit switch). Only the sliding door in front of the access to the base enclosure, or in front of a landing-level safety door, can be opened.

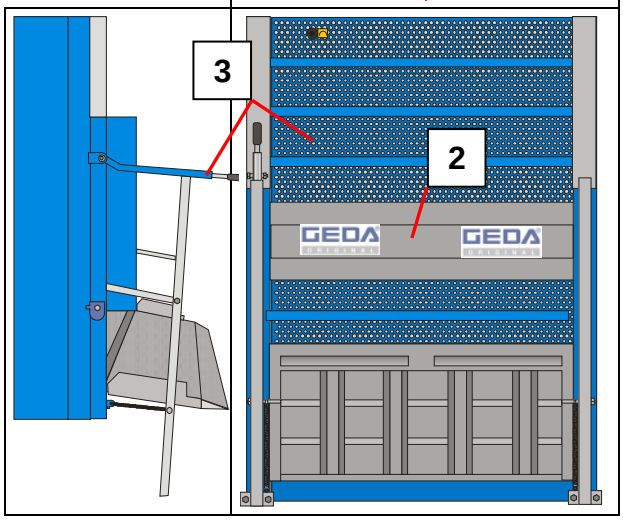
Vertical sliding door with counterweight

1 = Centre handle grip (1)
2 = Lower handle grip (2)



Vertical sliding door with ramp

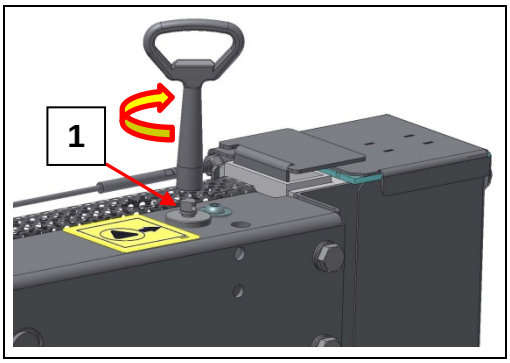
3 = Lever to open/close from the outside



The ramp must safety rest on the landing floor and transition plate of the landing level safety door.

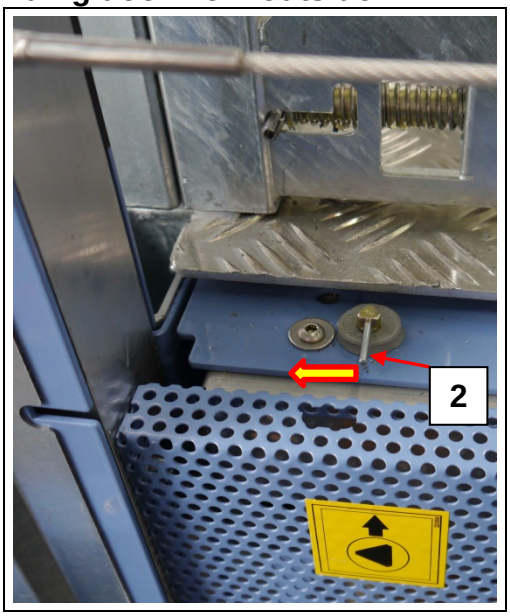
The handle (3) must be installed on the left or right depending on the installation location of the landing door.

Emergency unlocking sliding door for the enclosure



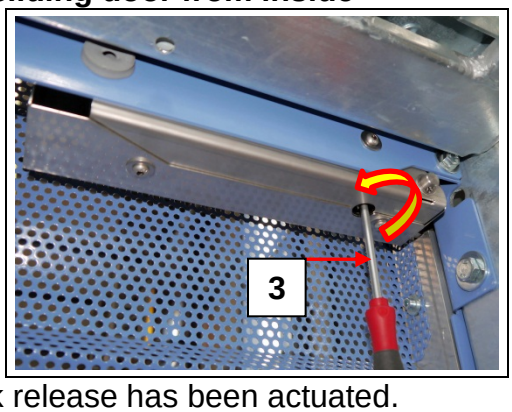
- To unlock in an emergency, place the triangular wrench (e.g. from the switch box of the ground station) on the triangular bolt (1) of the lock and rotate to the right (clockwise) until the sliding door opens.
- Turn the wrench back after interlock release has been actuated.

Emergency unlocking of the car sliding door from outside



- For Emergency unlocking, rotate the activating lever (2) clockwise until the sliding door can opens.
- Turn back the activating lever (2) after unlocking.

Emergency unlocking of the car sliding door from inside



- Insert the triangular wrench (3) into the lock and turn anticlockwise until the sliding door opens.
- Turn the wrench back after interlock release has been actuated.

☞ **The triangular wrench is located in the box for the documents and tools.**

3.3 Box for documents and tools

The document and tool box (1) contains:

- Triangular wrench to unlock the trapdoor in the roof.

The triangular wrench can also be used to open or close the switch box and emergency interlock release the sliding doors.

- 1 x Ring spanner AF 55 for resetting the safety gear.

- Lever to release the motor brake.

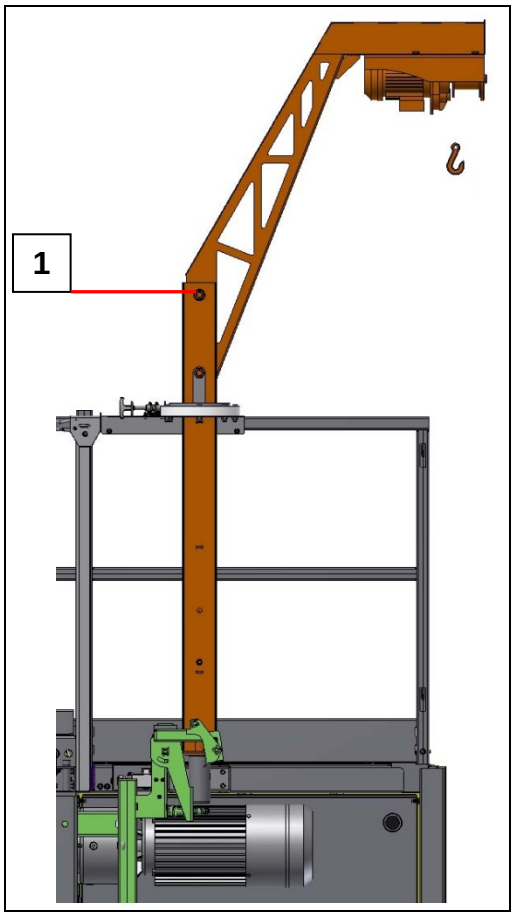
The document and tool box should contain.

- The instruction manual for the machine
- Spare parts lists
- Circuit diagrams
- Operating instructions of the operating company
- Rescue plan of the operating company

3.4 Components as accessories

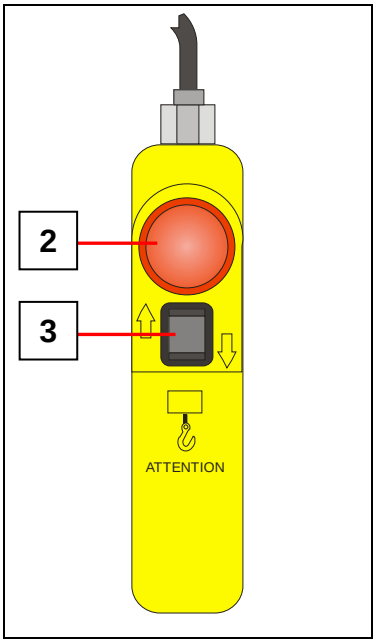
3.4.1 Assembly crane

When assembling the mast, the assembly crane (1) can lift mast sections of approx. 88kg onto the assembled mast.



Assembly crane control

2 = **EMERGENCY STOP** (only switches off the assembly crane).
3 = Rocker switch for **UP** and **DOWN.**



3.4.2 Assembly cage

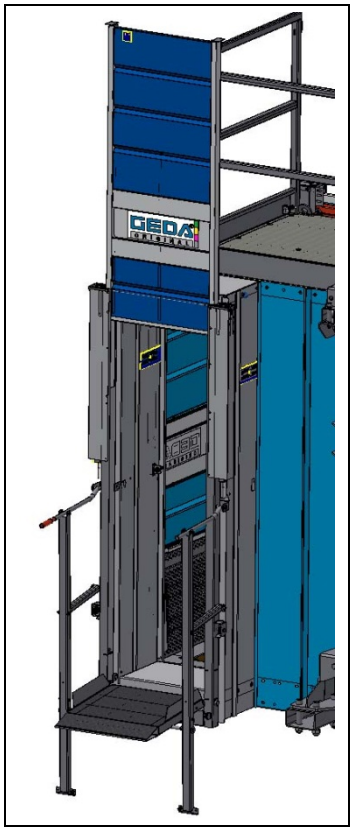
The assembly cage can be hooked onto the roof railing to assemble the mast sections, mast ties and cable guides.

3.4.3 D-door

Exit door on the mast side (D-side) of the car.

The D-door can only be opened when the car is stationary in front of the landing-level safety door at the stop position.

Operation:
Refer to the vertical sliding door with ramp in Chapter 4.3.1



Landing-level safety door to the D-door

Item No. 38100

Assembly:
Refer to Assembly Instruction "AI007" (Landing-level safety doors for temporary hoists).

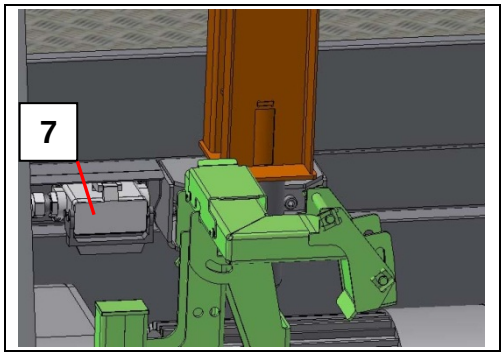
Operation:
Refer to Chapter 4.3.4

3.4.4 Controls for special operation (assembly/drop test)

☞ **These controls must be kept locked by the operating company.**

The drop test and assembly control are connected at the plug connection (7) at the car on the mast side.

➢ Disconnect the dummy plug and connect the appropriate control.

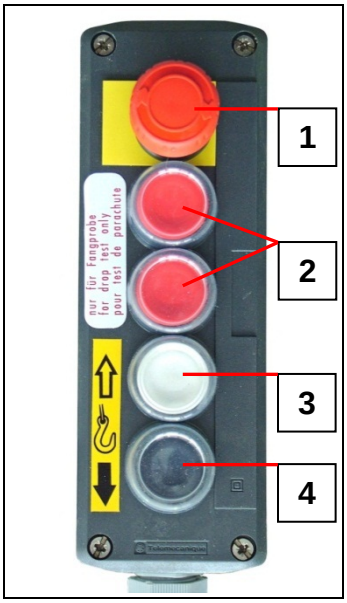


Drop test control

Used to test the safety gear with a drop test.

☞ **The drop test control must only be operated by a technically competent person!**

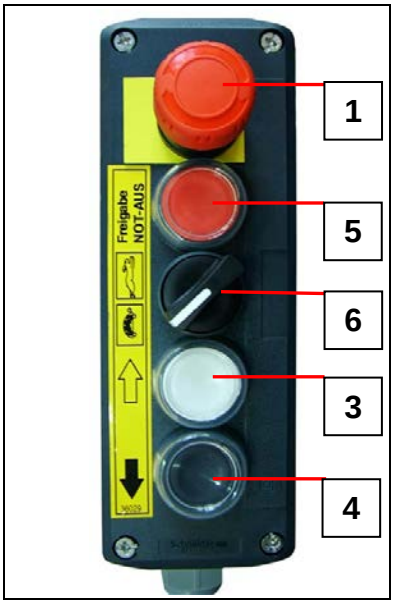
1 = **EMERGENCY STOP**
2 = **Brake release** buttons
3 = **UP** button
4 = **DOWN** button



Assembly control

Is used for assembly of the hoist

1 = **EMERGENCY STOP**
5 = Button **EMERGENCY STOP enable**
(press before the travel command and keep pressed until the ascent or descent has finished.)
6 = Selector switch speed
Normal / Slow
3 = **UP** button
4 = **DOWN** button



3.5 Technical Data

3.5.1 Operating and environmental conditions

The machine must only be operated in the following operating and environmental conditions:

Temperature range:

Standard	minimum	- 20 °C
	maximum	+40 °C
with special equipment (switch box with air-conditioning unit)	maximum	+50 °C

Wind speed:

Operation/maintenance/servicing	maximum	72 km/h
Installation	maximum	45 km/h

The height-dependent variation in wind speed must be taken into account.
It may be necessary to cease/prohibit operation of the machine under extreme weather conditions (e.g. thunder storm or sand and snow storms), even if the operating and environmental conditions fall within the bounds of those stated.
Here, the operating company must provide appropriate regulations.

Atmosphere:
Transporting persons:
The atmospheric composition must be appropriate for persons in this area. In particular, reduction in the oxygen concentration as a result of displacement or consumption must be prevented. The legal limit values for pollutant concentrations/aerosols and dust in the workplace must not be exceeded.

Transporting material:
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, then the corrosion protection and/or the functional reliability of the electrical components must be inspected at regular intervals and, if necessary, replaced. Fine dusts must be removed.

3.5.2 Speeds

Lifting speed

Operation (depending on load)	54 m/min (at 1000 kg) to 40 m/min (at 2000 kg)
Exit door (B-side) with ramp [design EU]	40 m/min
Assembly	32 m/min

Safety gear (FV50)

Activation speed	approx. 75 m/min.
Gravitational acceleration in the car for **EMERGENCY STOP**	< 1 g

3.5.3 Electrical connected loads

Base unit (EU)

Operating voltage	400 V / 50 Hz / 3Ph/PE
Mains fuse	3 x 63 A
Protection class	IP 54
Mains plug	CEE 5 x 63 A, 6 h, red

Base unit (USA)

Operating voltage	480 V / 60 Hz / 3Ph/PE
Mains fuse	3 x 63 A
Protection class	NEMA 3

Drives

Power	2 x 15kW
Voltage	380 V / 85 Hz
Power consumption	2 x 30 A
Duty cycle (ED)	S1 (100%)

3.5.4 Assembly height

Vertical assembly	max. 200 m

3.5.5 Acoustic emissions

Sound level	< 78 L_{PA}

3.5.6 Vibrations in the car

Symbols

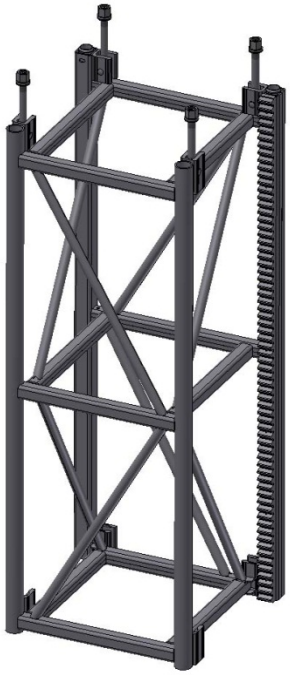
a = Effective value for the unweighted acceleration
a_w = Effective value of the frequency-weighted acceleration evaluated in accordance with ISO 2631-1:1997
a_{wx} = a_w in m/s² for the x-direction with frequency weighting W_d
a_{wy} = a_w in m/s² for the y-direction with frequency weighting W_d
a_{wz} = a_w in m/s² for the z-direction with frequency weighting W_k

horizontal direction **x**	Direction of car door
horizontal direction **y**	transverse to the **x**-direction
vertical direction **z**	Direction of travel

Operating status	frequency-weighted vibration acceleration a_w		
	a_{wx}	a_{wy}	a_{wz}
Travel upwards / downwards	0.03 -1.1 m/s²	0.03 -1.1 m/s²	0.15 -0.5 m/s²

3.5.7 Mast

Dimensions in mm	600 x 540 x 1495



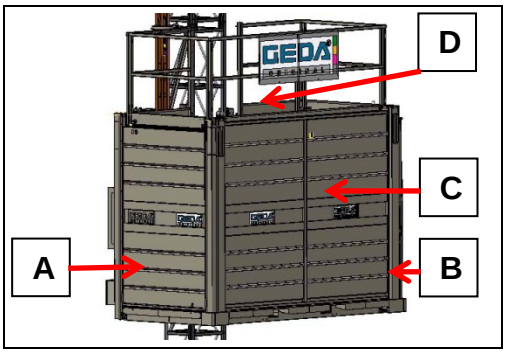
Weight	88 kg
Rack and pinion module	7 mm
Tightening torque (eye bolts mast connection)	300 Nm (width across flats 30 mm)
Condition for tightening torque	galvanized nut on galvanized retaining strap without lubrication
First mast tie	≤ 6 m
Vertical distance mast ties	≤ 12 m
Vertical distance travelling cable guide	≤ 4.5 m
Max. protruding mast length	
Operation	7.5 m
Assembly	12 m
Inclination of mast Vertical structure	Vertical inclination of the mast max. 0.5 °. Check inclination during and following installation using appropriate means.
Thermal expansion of mast	0.012 mm/m

3.5.8 Payloads, dimensions and weights

Lifting capacities

Car		
Operation	2000kg /	22 persons
		1920 kg + 1
		1840 kg + 2
		1760 kg + 3
		1680 kg + 4
		1600 kg + 5
		1520 kg + 6
		1440 kg + 7
		1360 kg + 8
		1280 kg + 9
		1200 kg + 10
		1120 kg + 11
		1040 kg + 12
		..960 kg + 13
		..880 kg + 14
		..800 kg + 15
		..720 kg + 16
		..640 kg + 17
		..560 kg + 18
		..480 kg + 19
		..400 kg + 20
		..320 kg + 21
		..240 kg + 22
Assembly	1000 kg	
Ladder in the car	max. 150 kg	
Assembly crane	max. 200 kg	
Assembly cage	max. 150 kg	
D-door (Option)	max. 200 kg	

Dimensions



Car sides

Enclosure (external) (width x depth x height)	2.37 m x 3.67 m x 2.52 m (2.70 m base mast)
Internal dimensions of the car (width x depth x height)	approx. 1.35 m x 3.15 m x 2.10 m
Dimensions car doors:	
Entry door (A-side) clearance door width/ door height	1.36 m / 2.02 m
Exit door (B-side) clearance door width/ door height	1.36 m / 2.02 m
Entry door (C-side) clearance door width/ door height	2.86 m x 2.02 m
Exit door (D-side) clearance door width/ door height	0.6 m x 2.02 m
Access height	0.45 m
Loading dimensions, container transportation [pushed in C-side] (width x depth x height)	2.31 m x 3.67 m x 2.56 m

Weights

Base unit with car and cable box (30 m flat cable)	approx. 3410 kg
Flat cable each 25 m	+ 50 kg

4 Operation

Operating personnel refer to Chapter 1.7.2

4.1 Safety during operation

- Also observe the safety instructions in Chapter 2.
- Observe the load bearing capacity of the equipment.

– The load must be evenly distributed over the car.
– The car must always be loaded in such a way that the access points for loading and unloading and the control point are kept clear.
– Position the load securely. Any material that could slip or fall must be secured.
– A max. of 22 persons may be transported, whereby the corresponding proportion of transported materials must be reduced.

The machine has an overload device that disables movement in both directions if the payload is exceeded.

- Protection to prevent persons from falling must be provided at loading heights above 2.0 m. (Install landing level safety doors.)
- Fundamentally, secure the machine against unauthorised use! - At the end or work / breaks, switch off the main switch and secure with a padlock.
- If the loaded car stops during operation due to a malfunction, the operator must recover the load. - Never leave a loaded car unattended!
- Operation is from outside of the hazard zone or from the car control.

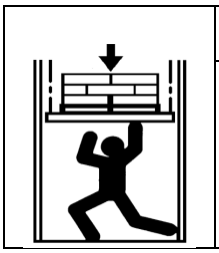
– Comply with the instructions of the operator.
– Do not step over material that is being transported as well.

- Operation of the hoist must be stopped if:

– Temperatures less than -20 °C.
– there is damage or other malfunctions.
– If a recurring inspection has been missed (refer to Chapter 2.7).

DANGER

Danger to life
Do not use the hoist in the case of fire.



DANGER

Danger to life
Crushing by the car.
Never remain inside the enclosure during operation.
When working in the enclosure, main switch off and secure against switching on.

WARNING

Fall and trip hazard
Be aware of steps and objects on the ground when entering / exiting the car.

4.2 Commissioning

- Turn the main switch (on the ground-station switch box) to the position "**I**" [**ON**].
- Rotate the key switch at the ground control to the position "**1**".

☞ **The sliding doors of the car and base enclosure must be closed.**

4.2.1 Safety check before starting work

Carry out a test run with an **empty** car and check
- that the complete path of travel is free.
- the door interlocks correctly function (refer to Chapter 4.3.1 to 4.3.3)

The car must be immediately stopped if
- an EMERGENCY STOP button is pressed.
- the upper limit switch approach bar has been actuated or the trolley has reached the mast end.
- the DOWN limit switch is actuated.

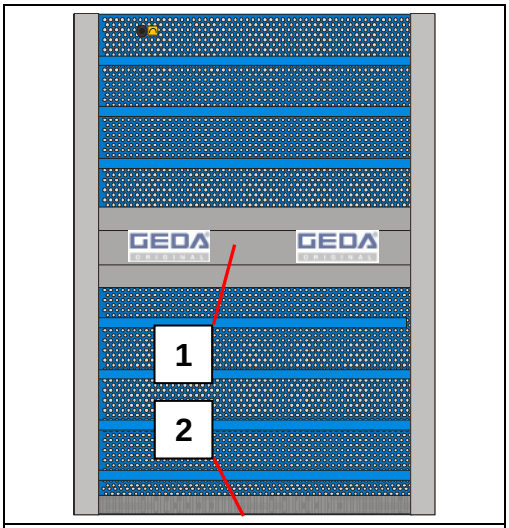
The car must not start if
- the key switch at the ground control is switched off.
- a sliding door on the car is open.
- the enclosure door is open.
- a landing-level safety door is open
- **An EMERGENCY STOP button is pressed.**

4.3 Operating the car accesses

4.3.1 Sliding doors at the ground station and car

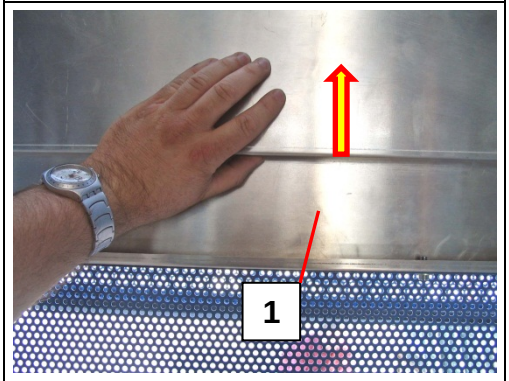
☞ **It must only be possible to open the sliding door of the base enclosure and car when the car is located at the ground station or in front of a landing level safety door.**

Vertical sliding door with counterweight



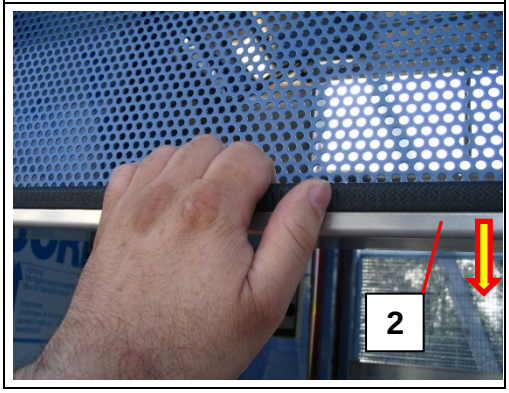
Open

➢ Using the centre handle grip (1) push up the sliding door to the stop



Close

➢ Using the lower handle grip (2) pull down the sliding door until it is completely closed.

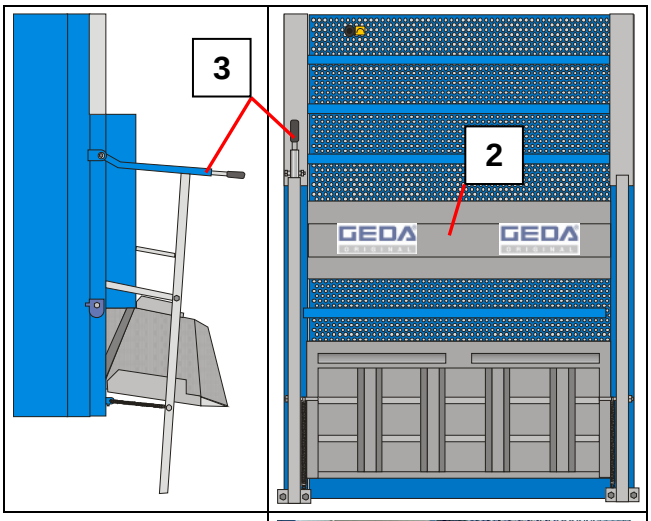


Vertical sliding door with ramp

Opening/closing from the inside:

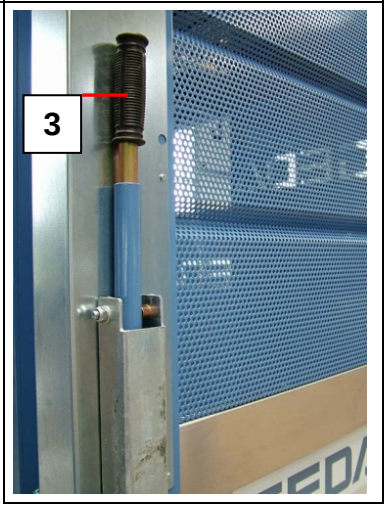
- Use the handles (2) to carefully open and close the door.

Ramp automatically raises / lowers.



Opening/closing from the outside:

- Use the lever (3) to open or close.



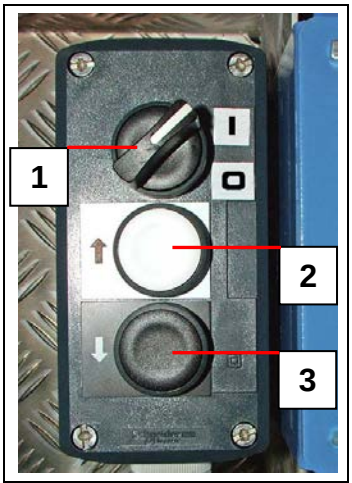
Check
The ramp must safety rest on the landing floor and transition plate of the landing level safety door.

Option for the sliding door with ramp

The sliding door with ramp (B-side) on the car can be delivered with electric drive.

The electrically-operated sliding door can be operated from the car and from the landing.
Both locations of control can be individually active or switched off.

Internal control of the sliding door



1 = Internal control **ON / OFF**

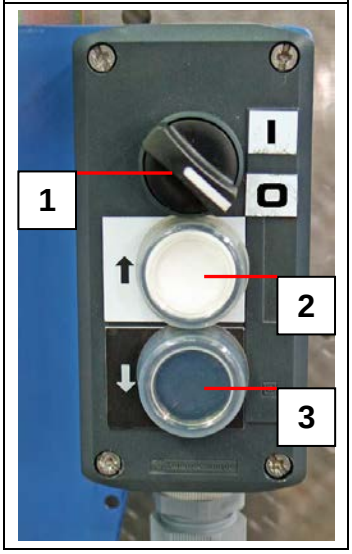
Open

➢ Press and hold button (2) until the sliding door is open.

Close

➢ Press and hold the button until the sliding door is closed.

External control of the sliding door



1 = External control **ON / OFF**

Open

➢ Press and hold button (2) until the sliding door is open.

Close

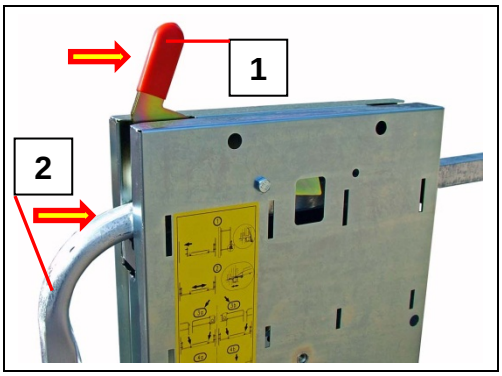
➢ Press and hold the button (3) until the sliding door is closed.

4.3.2 Landing-level safety door for sliding door with ramp

☞ **Sliding, landing level safety doors must only be opened after the loading ramp has been fully folded down.**

Open

➢ Press the lever (1) in the direction of the arrow and push open the sliding door (2).



Close

➢ Close the sliding door (2), until the lever (1) engages downwards.

4.3.3 Landing-level safety door for sliding door with counterweight

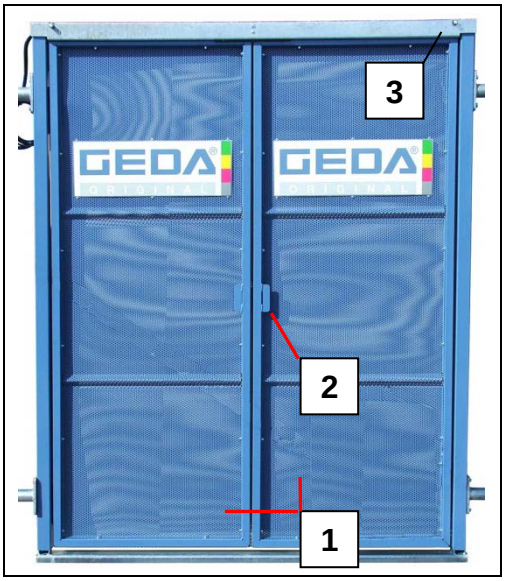
☞ **The double doors at the stop positions can only be opened when the car is stationary at this stop position.**

Open.

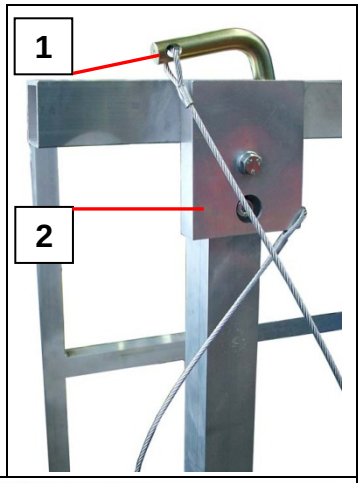
➢ To open, forcefully pull on both handles (2) or, from the car, push on both leaves of the door (1) towards the building / plant.

Close

➢ Using the handles (2) on the door leaf (1), close towards the car until the interlock (3) engages.



4.3.4 Landing-level safety door to the D-door

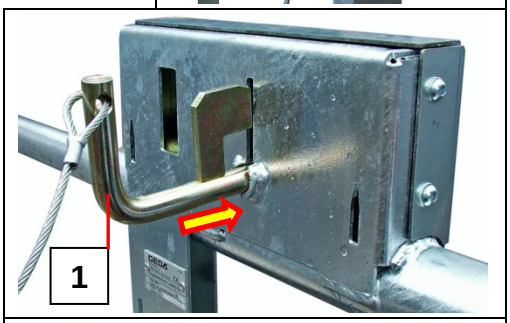


Open the landing level safety door

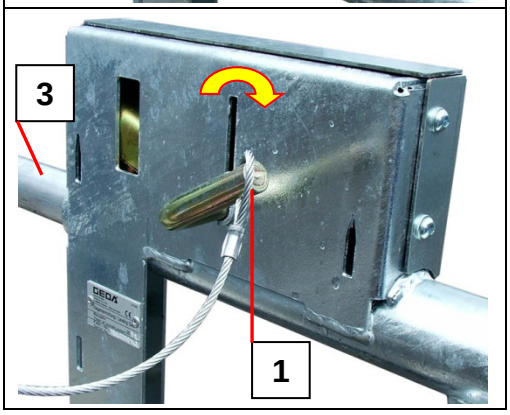
- ➢ Open the D-door.

The ramp automatically lowers

- ➢ Remove the key (1) from the pocket (2) on the railing post.



- ➢ Put the key (1) into the lock for the landing level safety door and turn to the right to unlock the sliding door.
- ➢ Push the sliding gate (3) up.



☞ **This key can only be removed when the sliding door is closed. The transfer ramp can only be closed and the car moved from the stop position when the key is removed.**

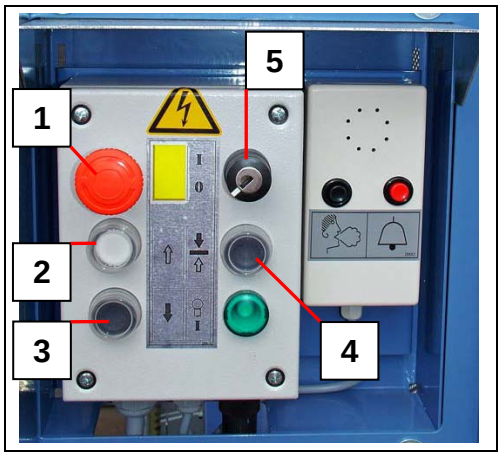
Close landing level safety door

- ➢ Push sliding door (3) closed until it engages in the lock with key.
- ➢ Turn the key (1) to the left to lock the sliding door, and remove the key from the lock.
- ➢ Place the key (1) in the pocket (2) on the collapsible railing post.
- ➢ Close the D-door.

The ramp automatically raises.

4.4 Operating the controls

4.4.1 Control at the ground station



1 = EMERGENCY STOP button

Ascent

➢ Push the **UP** button (2).
The car moves directly to the top level and stops there.

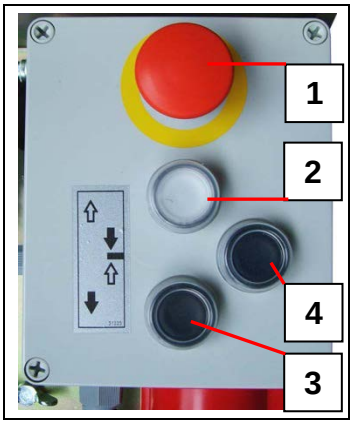
Descent

➢ Press and release the **DOWN** button (3).
The car moves from any level down to the ground station.

Stopping at landing

➢ Momentarily press the **landing stop** button (4).
Car stops at the next landing.

4.4.2 Control at the levels



1 = EMERGENCY STOP button (does not engage)

Ascent

➢ Push the **UP** button (2).
The car moves directly to the top level and stops there.

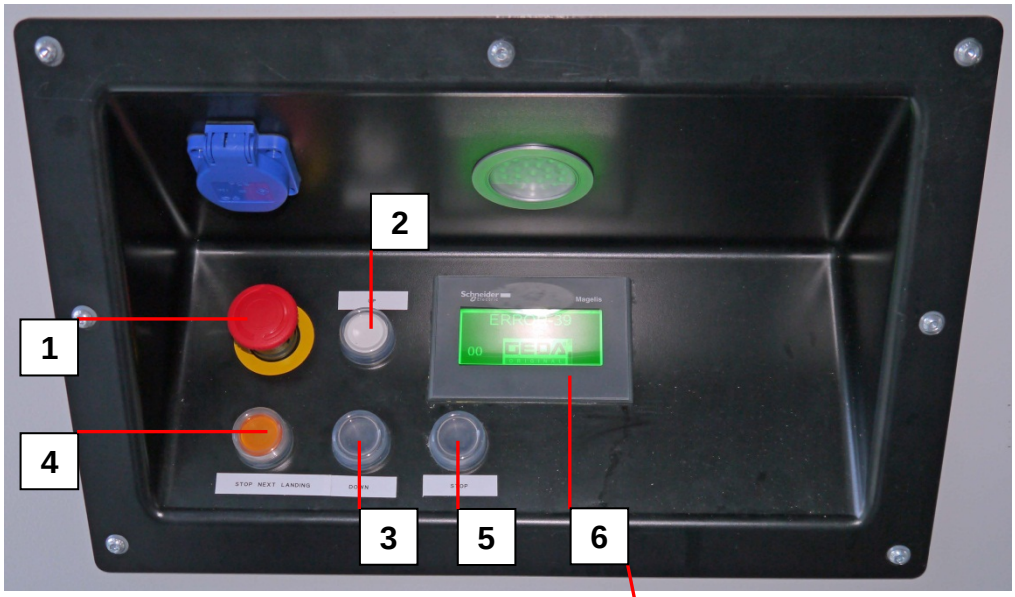
Descent

➢ Press and release the **DOWN** button (3).
The car moves from any level down to the ground station.

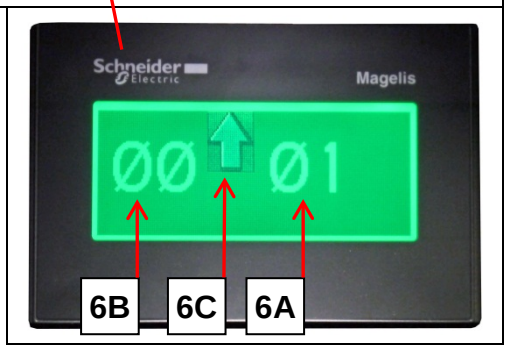
Stopping at landing

➢ Momentarily press the **landing stop** button (4).
Car stops at the next landing.

4.4.3 Car control "Stop at the next landing"



1 = EMERGENCY STOP push-button



6 = Display
6A = Destination (from pressing the button Landing stop)
6B = Position of car
6C = Direction of travel

Ascend

➢ Press and release the button **UP** (2).

The car moves automatically to the highest level and stops there.

Descend

➢ Press and release the **DOWN** button (3)

The car moves down to the ground and is automatically stopped by the **DOWN** limit switch on the base unit.

Stopping at landing

Stop at the next landing above
➢ Press and release the button **UP (2)**.
The car automatically moves upwards.

➢ Push the **"Landing stop"** button (4).
The button illuminates to confirm.
The car stops at the next landing above.

Stop at the next landing below
➢ Press and release the button **DOWN** (3).
The car automatically moves downwards.

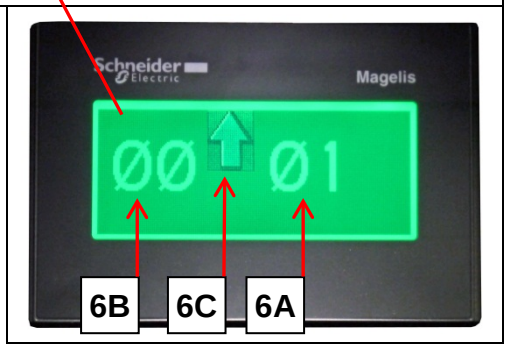
➢ Push the **"Landing stop"** button (4).
The button illuminates to confirm.
The car stops at the next landing below.

Stop the car
➢ Momentarily push the **STOP** button (5).
The car immediately stops.

In an emergency, activate the **EMERGENCY STOP** button (1).

4.4.4 Car control with level pre-selection

1 = EMERGENCY STOP push-button



6 = Display
6A = Destination
6B = Position of car
6C = Direction of travel

Moving to a landing

➢ On the **keypad** (2) enter the destination (landing).

For example:
0 → ground floor
1 → landing 1
10 → landing 10

➢ Press **Start** button (3) to confirm entry.
The car moves to the landing selected and stops there.
The display (6) indicates the respective position and direction of travel.

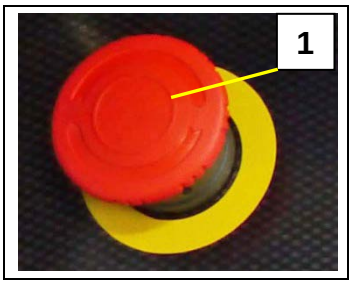
Stop at the next landing

➢ Push the **"Landing stop"** button (4).
The button (4) illuminates to confirm.
The car stops at the next landing in the direction of travel.

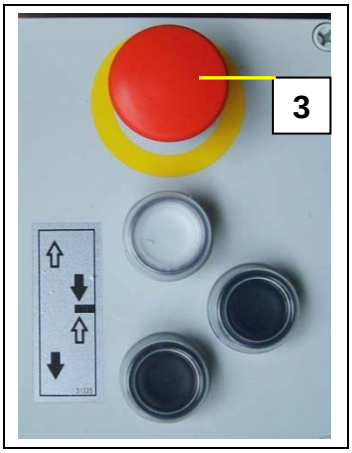
4.5 Emergency shutdown

By pushing an **EMERGENCY STOP** button, the car can be shutdown in situations that present a risk for service personnel or to the hoist.
An **EMERGENCY STOP** button (1) is located on the control at the ground station and on the car control.

☞ **EMERGENCY STOP slam buttons (1) 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 (3) is located on the electric modules of the landing level safety doors and is used to stop travel from each landing. This stop button (3) does not engage which means that further travel is immediately possible after the stop command.



A key switch (2) is located on the control at the ground station, with which the car can be switched off. The car is ready for travel again after being switched on.

4.6 Interrupting work – end of work

➢ Move the car to the ground station and unload.

If there is a risk of frost, move the car up a little, so that the down limit switch is clear.

➢ Turn off key switch on the control at the ground station and remove the key.
➢ Turn off the main switch (Position "**0**" [**OFF**]) and secure with a padlock.
➢ Disconnect the mains plug.

5 Malfunctions - Diagnosis – Repair

WARNING

Troubleshooting and fault rectification must only be carried out by specially trained and authorized personnel.
Before each troubleshooting task, move the car to the ground and unload it!
Immediately discontinue operation if faults occur that endanger operational safety!

DANGER

Electric shock

Before working on the electrical installation of the construction hoist, switch off and lock the main switch. For safety, disconnect the mains plug.

Before opening the car-control switch box, the load switch at the switch box must be switched off!

DANGER

Danger to life
Falling during troubleshooting/fault rectification at great heights.

Troubleshooting/fault rectification is partially carried out at great heights. In order to reduce the hazard of life-threatening falls:
Wear a safety harness at heights of more than 1.80 m.

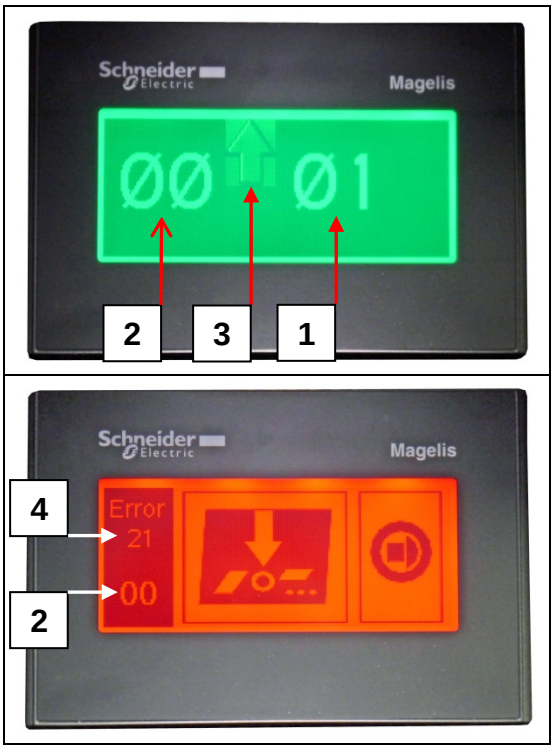
Never use parts of the construction hoist or mast as a climbing aid.
Only use tested and sufficiently stable climbing aids.

Never climb hands-free. Always hold on with at least one hand.

Keep all climbing aids and railings clear of soiling and dirt.

5.1 Display module

The display module indicates the destination, position of the car and direction of travel
In addition, it is also used for quick and easy identification of the switching statuses of the limit switch and error in the system.



1 = Destination
2 = Position of car
3 = Direction of travel indicator
4 = ERROR code

Actions for ERROR indications

- ERROR code displayed identifies and rectifies the fault.
- Wait until the control is automatically enabled.

Explanation of the symbols and numerical codes

Display	Explanation
⇧	Ascend
⇩	Descend
01	Landing selection (destination)
01	Actual position

Display	Explanation
ERROR 03	Door "A" open
ERROR 04	Door "B" open
ERROR 05	Door "C" open
ERROR 06	Door "D" open
ERROR 07	Enclosure door open / setting mechanism activated.
ERROR 08	Collective message **EMERGENCY STOP** line of the ground station is interrupted (**EMERGENCY STOP** ground station, landing-level safety door control or dummy plug).

Display	Explanation
ERROR 10	**EMERGENCY LIMIT UP** car moved up too far
ERROR 11	**EMERGENCY LIMIT UP** climbing formwork
ERROR 12	**EMERGENCY LIMIT DOWN** car moved down too far
ERROR 13	**EMERGENCY LIMIT DOWN** climbing formwork
ERROR 14	Safety gear has triggered
ERROR 15	Trapdoor open
ERROR 16	Assembly bridge roof 1 (extended) [Option]
ERROR 17	Assembly bridge roof 2 (extended) [Option]
ERROR 21	**EMERGENCY STOP** control, car
ERROR 22	
ERROR 27	Dummy plug assembly or drop-test control (disconnected)
ERROR 30	Car overloaded
ERROR 31	Interlock cam (activating rail is extended)
ERROR 32	Underrun protection, cable carriage (collision car with cable carriage)
ERROR 33	Wind sensor (excessive wind)
ERROR 34	Cold package (temperature < -20°C / -4°F)
ERROR 35	Motor temperature excessive
ERROR 36	Brake resistance temperature excessive
ERROR 37	Frequency inverter fault
ERROR 38	Lubrication device empty
ERROR 39	No mains voltage
ERROR 40	Battery charging fault
ERROR 41	Fuses -2F002 - -2F004
ERROR 42	Assembly crane (disconnection open)
ERROR 43	Switch off travelling cable
ERROR 44	Start-up grid 1 (activated) [Option]
ERROR 45	Start-up grid 2 (activated) [Option]
ERROR 46	Monitoring mast connection
ERROR 49	Car-control switch box not switched on
ERROR 50	Maintenance

5.2 Fault table

Possible faults and the appropriate remedial action are given below.

Fault	Cause	Remedial action
Car does not move	Mains plug disconnected	Connect mains plug
ERROR 39	Mains fuses	Check mains fuse and replace / switch on if necessary
	Phase failure	Measurement / correction of the phases
	Incorrect phase sequence	Correction of the phase sequence
	Main switch off	Switch on the main switch
	Key switch at the ground control set to off	Switch on the key switch
	Fuses in the switch box ground station okay	Check / correction
ERROR 49	Maintenance switch, car control switched off	Switch on the maintenance switch below the car control
ERROR 07, 21	**EMERGENCY STOP** button (at a control point) pressed	Unlock the **EMERGENCY STOP** button
ERROR 03, 04, 05, 06, 18	Car door is open	Close the car door
ERROR 07	Enclosure sliding door is open	Close the sliding door / *barrier* at the enclosure
ERROR 07	Landing level safety door open	Close landing level safety door
ERROR15	Trapdoor open	Close trapdoor
ERROR 16, 17	Assembly bridge extended	Retract the assembly bridge
ERROR 10, 12	**EMERGENCY LIMIT switch** is actuated	Refer to car moved too high / too low (Chapter 5.3.4 and 5.3.5)
ERROR 14	Safety gear engaged	Release safety gear (see service manual)
ERROR 42	Assembly crane is not secured	Secure the assembly crane

Fault	Cause	Remedial action
ERROR 38	Grease container of the lubrication device is empty	Fill the grease container (refer to the maintenance manual)
ERROR 35	Overtemperature of the drive motors Overtemperature braking resistances (frequency converter)	Wait until the drive motors have cooled down and unload the car. Reduce the load Attention! Ascent only possible
Car only moves **UP**	Is the **DOWN** limit switch functional	Check/replace **DOWN** limit switch
Car only moves **DOWN**	Is the **UP** limit switch functional Excess distance of proximity switch for monitoring gear rack	Check/replace **UP** limit switch Adjust the clearance to the gear rack (3-7 mm)
ERROR 30	Overload protection has activated	Reduce load until error message goes off (refer to Chapter5.3.2)
Motors do not generate full power	Voltage drop of more than 10%	Select a supply cable or extension cable with a greater cross section (refer to Chapter 5.3.1)
Car has moved too high ERROR 10 (refer to Chapter 5.3.4)	**UP** limit switch is defective Fault in the electrical system	Check/adjust **UP** limit switch, replace if necessary Check system
Car has moved too low ERROR 12 (refer to Chapter 5.3.5)	**DOWN** limit switch is defective Brake air gap is too large Car is overloaded Fault in the electrical system	Check/adjust **UP** limit switch, replace if necessary Adjust air gap Reduce the load Check system
Door to the base enclosure / car does not open ERROR 31	Car is not exactly at the ground station/landing Switch / door lock defective	Move car until it is in front of the base enclosure/landing door Door **EMERGENCY** unlock. Replace defective lock / switch
Car does not recognise the level selected	Error detecting the landing approach bar **Faulty** sensor or distance to the approach bar too large	Carry out a reference run to the ground station (refer to Chapter 5.3.6) Check/adjust **sensor** and replace if necessary

5.3 Fault rectification

5.3.1 Motors are not giving full output:

- Voltage drop of more than 10% of the rated voltage.
- Select supply cable with higher wire cross section.

The integrated thermoswitches turn off the control current when overloaded. Work can continue after a certain cool-down period (possibly reduce load).

Refrain from repeated overheating/overloading. - Otherwise the service life of the motor/brakes will be shortened.

5.3.2 Overload indication

The car is equipped with an overload warning device which prevents it being moved if it is overloaded.
If the car is overloaded, ERROR 30 is displayed.

If ERROR 30 is indicated

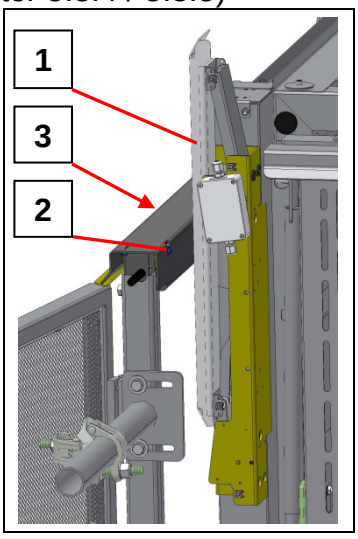
➢ Reduce the load in the car until ERROR 30 goes off. - Only then is travel possible again.

5.3.3 Car door or enclosure door/level door cannot be opened

The car door or enclosure door/level door cannot be opened when the car is not stationary in front of the enclosure door or a level door, or the cage is not supplied with voltage.

Possible cause:

- No mains or control voltage.
- Car moved too high or too low (refer to Chapter 5.3.4 / 5.3.5)
- The interlock cam (1) of the car does not operate the interlock bolt (2) of the landing level door.
- Defective interlock (3) of a landing level door.



5.3.4 Car moved too high

The emergency limit switch for the car can reach the top EMERGENCY limit switch approach bar if

- The level limit switch is defective,
- there is a malfunction in the electrical system.

Action:

Activate the motor brake at the manual release (brake release lever (refer to Chapter 5.4.3)

5.3.5 Car moved too low

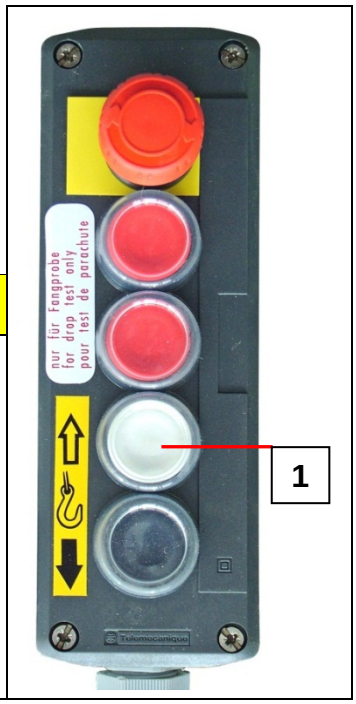
The emergency limit switch for the car can reach the bottom EMERGENCY limit switch approach bar if

- The brake air gap is too large,
- The DOWN limit switch at the lowest stop position is defective,
- there is a fault in the electrical system,
- the car is overloaded.

Action:

➢ Connect the drop-test control to the plug connection on the car (refer to Chapter 3.4.4).

➢ From outside the car, push the **UP** button (1). - Now the car will move out of the EMERGENCY LIMIT position.



CAUTION

The "UP" button (1) must be pressed, because this control bridges the Emergency limit switch. If the red drop-test control buttons are pressed by accident, the motor brake will release and the motor can drop hard onto the foot section (risk of damage).

☞ **If this effect occurs repeatedly although the car is not overloaded, have the brake checked and adjusted by a qualified person.**

5.3.6 Car does not recognise the level selected

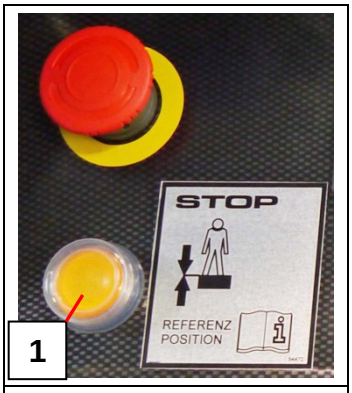
If the car runs past the selected level or stops at the wrong level, then a reference run down to the ground station must be carried out.

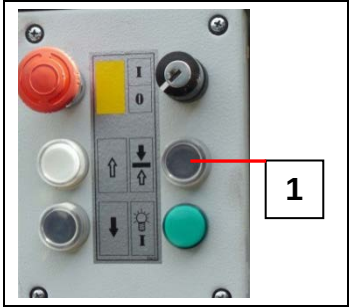
Carry out reference run

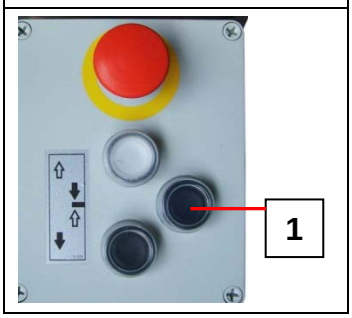
- Press the **LANDING STOP** button (1) and hold pressed for approx. 30 seconds.

After approx. 30 seconds, the car slowly moves downwards (32m/min.) to the ground station and stops there.

After the reference run, the car can be again operated as normal.







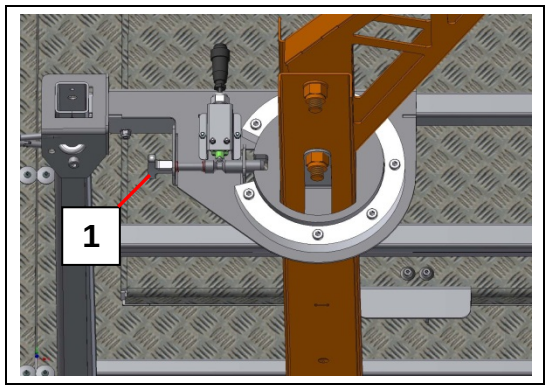
☞ **The reference run can be carried out using all LANDING STOP buttons (1).**

5.3.7 Monitoring locking of the assembly crane

The assembly crane must not pivot towards the path of travel (mast) whilst moving. Thus, this must be locked in a secure position.

The locking bolt (1) pulled out interrupts the safety circuit and travel with the car is not possible.

➢ Push the locking bolts (1) towards the bracket and lock.



The locking bolt (1) must also be removed when no assembly crane is installed.

5.4 Rescue

Rescue can be necessary if, e.g.

- there is no mains voltage
- the electrical system malfunctions
- The drives have failed
- The safety gear has triggered

WARNING

If the car supervisor does not feel sufficiently qualified to organise and carry out the rescue, the relevant authorities must also be notified. Inform (fire service, technical rescue services, works security).

5.4.1 Basic conduct in the event of a rescue/malfunction

- Remain calm and do not act hastily.
- Get an overview of the situation.
- Keep unauthorised persons away.
- Make contact with anyone trapped.
- Try to find out what has caused the malfunction/defect in the system.
  - Power supply failure (emergency lighting on).
  - Activation of the safety gear.
  - Error code in the display module
- Inform the persons locked in about the further procedure.
- Inform the supervisor about the malfunction.
- Inform any rescue services.

☞ **If the operator does not feel confident or qualified to organise and carry out the rescue, please notify the relevant authorities. (Rescue forces).**

5.4.2 Rescue action plan

Persons in the car:

Action 1: Rescue in the event of an ERROR indication.

Action 2: Self-rescue using the **EMERGENCY lowering device**.

Action 3: Exit the car through the roof hatch to the walk-on roof.

Action 4: Request help.

Action 5: Rescue in accordance with the Emergency plan of the operating company.

The following will explain the individual measures of the plan.

5.4.3 Rescuing persons from the car

Action 1: Rescue in the event of an ERROR indication

ERROR messages indicate errors in the hoist system or switching statuses of the limit switch.

- Identify the ERROR message (refer to Chapter 5.1).
- If possible, rectify the error/switching status (refer to the Fault table Chapter 5.2).

Action 2: Self-rescue using the EMERGENCY descent device

In an emergency, the next lowest level can be reached by releasing the drive brake. This enables people trapped in the car to evacuate themselves.

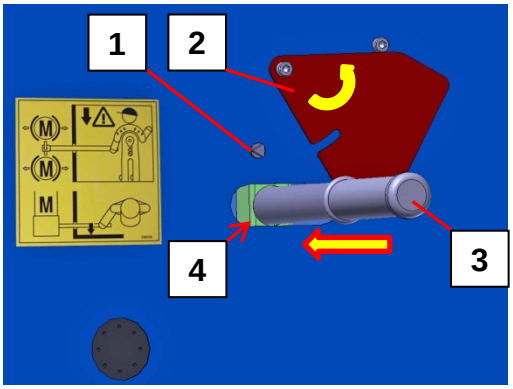
☞ **Descent of the car by releasing the motor brake is not possible if, e.g. the safety gear has activated (ERROR 14).**

Carry out EMERGENCY descent

WARNING

Triggering the safety gear by lowering too quickly.
This disables the car which must subsequently be initially raised. Only lower the car very slowly.

- Release the triangular-headed bolt (1).
- Move the cover plate (2) to the side.
- Remove the lever (3) from the document and tool box and insert through the aperture (4) in the connection rod of the brake release lever.



- Release the motor brake by carefully metered pulling (towards the car door) on the lever (3).

Car glides down.

CAUTION

The brake becomes very hot.
At the latest after every 1-2 metres of lowering, stop for approx. 2 minutes to avoid overheating the brakes.
The length of a mast section can be used for orientation.

➢ When at the next landing, release the landing lever (3).
Stop the car so that the car and landing door is at the same level.

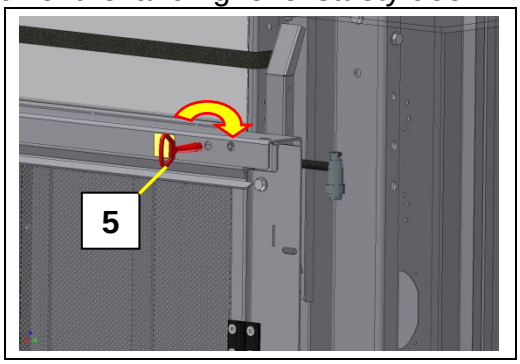
If the access door to the car can be opened, exit the car can as normal. Otherwise the doors must be unlocked.

Emergency unlocking of the car door
Refer to Chapter 3.2.6

Emergency unlocking of the landing-level safety door with double doors

The landing level safety door is also equipped with an emergency interlock release for rescue and recovery.

➢ Remove the triangular wrench (4), e.g. from the ground-station switch box and insert into the lock of the landing-level safety door.
➢ Rotate the triangular wrench clockwise until the double doors can be opened.



After the emergency:
➢ Remove the lever (3) and replace in the document and tool box.
➢ Attach the cover plate (2) using the triangular-headed bolt (1).

Action 3: Exit the car through the roof hatch onto the walk-on roof.

If the car is not stationary at a landing, evacuation must be carried out through the walk-on roof.

Place the ladder at the roof hatch and open the roof hatch (refer to Chapter 3.2.5).

Evacuation from the car roof is carried out in accordance with the Emergency plan.

Action 4: Request help

➢ Using the intercom, contact the ground station.
For operation of the intercom system (refer to Chapter 3.2.3).

Action 5: Rescue in accordance with the Emergency plan of the operating company.

Evacuation is carried out in accordance with the Emergency plan.

☞ **The operating company must prepare an Emergency plan and placed on the hoist well visible for every person!**

5.5 Servicing

Repair tasks must only be carried out by trained and competent persons because they require special expert knowledge and skills. Neither is communicated in this operating manual.

When ordering spare parts please provide the following:
- Type
- Year of manufacture
- Serial No.
- Operating voltage
- Quantity required

The rating plate is located in the car.

Spare parts must conform to the technical specifications of the manufacturer! 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

6 Disposal of the machine

Dismantle the equipment properly at the end of its service life and dispose of according to national provisions.

Observe the following when disposing of equipment components:
- Drain and dispose of oil/grease in an eco-friendly way.
- Recycle metal parts.
- Recycle plastic parts.

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