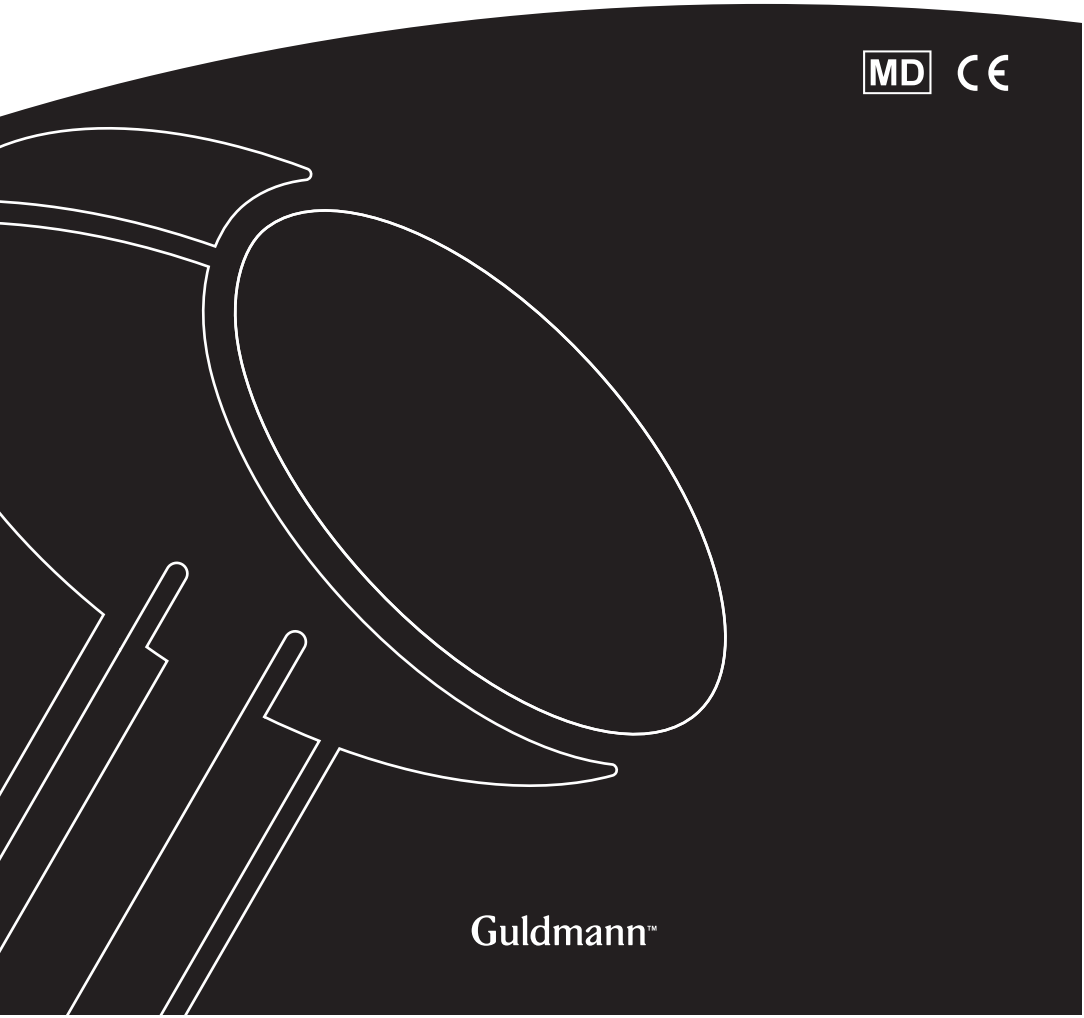
GB/US . . . . GH1 F Ceiling Hoist

User manual – vers. 103.0

MD CE



Guldmann™

GH1 F Ceiling Hoist

Hoist numbers:
55xxxx

1.00 . . . . . GH1 F use 4
1.01 . . . . . Manufacturer 4
1.02 . . . . . Intended purpose 4
1.03 . . . . . Area of use 4
1.04 . . . . . Conditions for use 4
1.05 . . . . . Important/Precautions 5
1.06 . . . . . Load limits on your GH1 F system 5
1.07 . . . . . Unpacking and preparation 6
1.08 . . . . . Placing a new GH1 F hoist in an existing rail system 7
1.09 . . . . . Power supply 7
1.10 . . . . . Installation of the lifting hanger before use 8
1.11 . . . . . Lifting sling 9
1.12 . . . . . Swing kit 11

2.00 . . . . . Description of functions 11
2.01 . . . . . Pictograms 12
2.02 . . . . . Indicator lamps and audio signals 12
2.03 . . . . . Audio signals 12
2.04 . . . . . Operation 13
2.05 . . . . . Installation 15
2.06 . . . . . Deinstallation 16
2.07 . . . . . Lock, Travelling trolley for GH1 F 17
2.08 . . . . . Turbo speed 17

3.00 . . . . . Transport/running in the rail system 17
3.01 . . . . . Safety functions 17
3.02 . . . . . Safety functions, installation/deinstallation 19
3.03 . . . . . Installation lock 19

4.00 . . . . . Accessories 20

5.00 . . . . . Environmental conditions 23

6.00 . . . . . Maintenance and storage 24
6.01 . . . . . Cleaning and disinfection 24
6.02 . . . . . Storage 24
6.03 . . . . . How to prevent/avoid corrosion? 24
6.04 . . . . . The owner's daily maintenance duty 24
6.05 . . . . . Disposal of the GH1 F including battery 24

7.00 . . . . . Service and lifetime 25
7.01 . . . . . Lifetime 25
7.02 . . . . . Safety/service inspections 25
7.03 . . . . . Service inspection, travelling trolley for GH1 F 26
7.04 . . . . . Trouble-shooting, GH1 F 26
7.05 . . . . . FAQ's 27

8.00 . . . . . Classification 27

9.00 . . . . . Technical specifications 29

10.00 . . . . . Approvals 32
10.01 . . . . . EU-Declaration of conformity 32

11.00 . . . . . Environmental policy statement – V. Guldmann A/S 33

12.00 . . . . . EMC Information 33
A. . . . . Warranty. 37
B. . . . . Service or Repair 38

1.00 GH1 F use

1.01 Manufacturer

V. Guldmann A/S
Graham Bells Vej 21-23A
DK-8200 Aarhus N
Tel. + 45 8741 3100
www.guldmann.com

1.02 Intended purpose

The GH1 F lifting module is intended for lifting and transferring a person with disabilities and for walking training.

1.03 Area of use

GH1 F is suitable for professional use in hospitals, nursing homes, rehabilitation centers, institutions, boat landings, on larger boats and in private homes and buildings, where operators with medical/clinical training are continually on site or on call.

1.04 Conditions for use

GH1F is a ceiling-mounted hoist that moves in a rail system.
GH1F is designed to be used with a variety of lifting hangers and lifting slings.

The use of the GH1 F is subject to the following:

- The GH1 F should only be used by trained personnel.
- The maximum nominal load, 175 kg (385 lbs), 205 kg (450 lbs) and 255 kg (560 lbs), respectively, must not be exceeded *(section 1.06)*.
- The instruction offered by Guldmann to all customer groups in connection with the purchase of a ceiling-mounted hoist has been received.
- The helper pays attention to the well-being of the user when using the hoist.
- The hoist is used in rail systems which are installed, tested and approved according to DS/EN 10535 and Guldmann's stipulations.
- Only technicians who have been certified by Guldmann may install and test the rail systems.
- The hoist is used with a Guldmann lifting hanger *(section 1.10)*.
- The hoist is used with a Guldmann lifting sling or with other suitable slings *(section 1.11)*.

The flexibility of GH1 F lies in the fact that it can be rapidly and easily – with the least manual handling – transferred from one rail system to another. Installing it on and deinstalling it from a rail system is partially automated and is carried out without the use of any tools.

GH1 F with lifting accessories is transported and stored in a specially designed transport trolley.

1.05 Important/Precautions

- Read the instructions carefully before using the hoist and in connection with cleaning and service of the hoist
- The hoist's maximum load must never be exceeded.
- The hoist may only be used to lift a person.
- The red strap for the emergency stop and the emergency lowering must be adjusted to the helper's reach, and must not be removed.
- If a defect or fault appears during use of the hoist, stop using the hoist, pull the emergency stop and refer the hoist to the Guldmann service team for repairs.
- The hoist is controlled by a microprocessor PCB, which can be damaged by static electricity if touched without the necessary precautions, *(see point 1.09)* The electronics may only be serviced by Guldmann approved service technicians.
- For safety reasons the side cover may only be dismantled when the emergency stop is activated *(see point 3.01)*.
- The user may not hold their hands around the lifting strap during lift and transfer.
- The lifting hanger must not be mounted or replaced when the hoist is positioned over the patient.
- Do not modify this equipment without authorization of the manufacture
- The GH1 F needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in Chapter 12 EMC Information.
- Portable and mobile RF communications equipment can affect the GH1 F.
- Accessories, transducers and cables must always be original Guldmann components. The use of other spare parts than those supplied by Guldmann A/S may result in poor EMC protection. This may cause damage to the GH1 F lifting module as well as electrical products in the nearby surroundings.
- The GH1 F should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the GH1 F should be observed to verify normal operation in the configuration in which it will be used.
- Transport of this equipment should only be undertaken after conditions described in section 5.00 (Environmental conditions).
- GH1 is not intended for use in oxygen rich environemnts.
- Any serious incident that occurred in relation to this device should be reported to the manufacturer and the local competent authority.

Re: EMC
If electromagnetic or other influences occur between this product and other products, these products must not be used together.

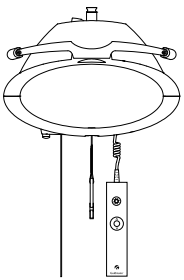
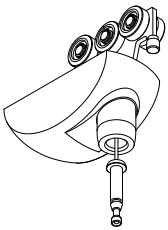
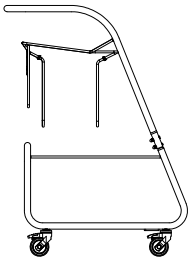
1.06 Load limits on your GH1 F system

Read the labels which indicate the maximum load limits of the components. The component which has the lowest load limit, e.g. the lifting hanger, the lifting sling, or other equipment, determines the maximum load limit of the entire system. The maximum load limit must not be exceeded.
Please note that the load limit may change when different components are used on a daily basis, e.g. lifting hangers, lifting slings.

1.07 Unpacking and preparation

Visual check of GH1 F
If it appears that GH1 F has been damaged when you unpack it, it must not be used until it has been checked by a qualified person or by the Guldmann Service Team.

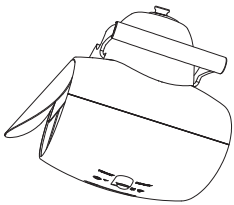
Contents of the boxes

		
GH1 F hoist module Hand control Charger Manual	**Travelling trolley for GH1 F** Label for rail system Manual	**Transport trolley for GH1 F** Handle Lower frame Bag for sling Nuts and bolts Manual

Button for reset of emergency stop
GH1 F is delivered with the emergency stop activated in order to ensure that the battery is not being discharged during long-term storage. To deactivate the emergency stop, the plastic cap around the “reset” button must be removed, and the “reset” button must be pressed in.

Mounting of side cover
GH1 F is standard delivered with side cover in white and yellow.

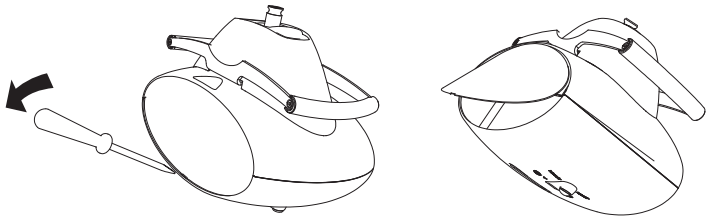
Before starting to mount the side cover it is important, for safety reasons, to make sure that the emergency stop is activated *(see point 3.01)*.



The chosen side covers are fitted on the side of GH1 F by bending the cover slightly and placing it in the groove at the side of GH1 F.

Exchange of side cover
If you want to change the appearance of GH1 F, the side cover can be exchanged or turned. Before starting to mount the side cover it is important, for safety reasons, to make sure that the emergency stop is activated.

The side cover is dismantled by inserting for instance a flat screwdriver in the opening between the groove and the cover and tilt the cover upwards and out. The side cover is fitted on the side of GH1 F by bending the cover slightly and placing it in the groove on the side of GH1 F.



1.08 Placing a new GH1 F hoist in an existing rail system

Please notice, when placing a new GH1 F hoist in an existing rail system it must be ensured that:

- The rated max load of the rail system, must be equal or higher than the max load of the new hoist.
  – If there is no max load mentioned on the rail system, the rail system must then be checked according to the guideline in the installation manual (distance between bracket according to max load).
  – If the brackets are not visible, then a load test with 1.5 x max load of the hoist must be performed minimum 20 min. During the test the deflection of the rails must not be higher than 1/200 of the length of the rail.
  – If it is not possible to do any of the above mentioned, please contact Guldmann or their representative.

- If the rail system can not be rated to the same max load as the hoist, then extra brackets must be installed according to the installation manual (distance between brackets according to max load).

1.09 Power supply

GH1 F is equipped with a battery that requires regular recharging.
The power supply must be connected to the power socket.
The enclosed power supply must always be used.

Safety concerning static electricity (ESD)
Service technicians and installers ***must*** use an ESD-safety package consisting of a mat, a ground wire, and a bracelet.
The technician/installer connects the mat to a grounding point, for instance a radiator or a water pipe. The technician/installer must then put on the bracelet

and connect it to the mat. If it is not possible to find a grounding point, the mat and the bracelet must be used as a minimum. Only then is it allowed to work with the PC Board or components where it is possible to come into contact with the PC Board.

1.10 Installation of the lifting hanger before use

Lifting hangers from other manufacturers

Guldmann shall not be liable for faults or accidents that may occur as a result of using lifting hangers made by other manufacturers.

If there is any doubt about the selection or use of a lifting hanger, please contact your supplier.

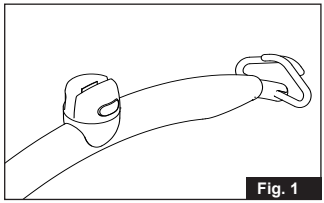


Fig. 1

The lifting hanger can be installed to the lifting strap without the use of any tools.

1. Press the yellow button and hold it in while the lifting strap's hook is inserted into the opening of the top cover of the lifting hanger *(fig. 2a - 2b)*.

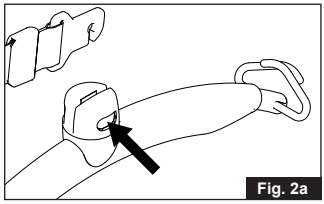


Fig. 2a

2. Release the yellow button *(fig. 2c)*

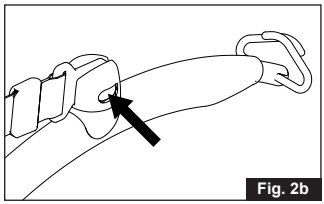


Fig. 2b

3. Rotate the strap attachment to a vertical position *(fig. 3)*.

Check that the yellow button has returned to its locked position by checking that it is flush with the cover of the lifting hanger and that the strap attachment can rotate freely.

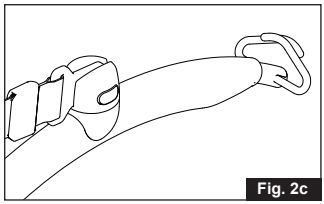


Fig. 2c

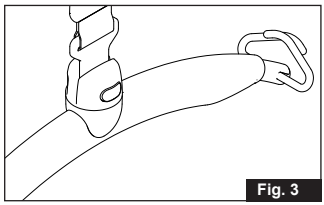


Fig. 3

1.11 Lifting sling

A lifting sling with four to eight lifting straps designed for mounting on hooks should be used when using a Guldmann lifting hanger. Place the straps on the hooks. Make sure that the rubber safety catch returns to its start position, so the straps can not unintentionally fall off.

Slings made by other manufacturers

Guldmann shall not be liable for faults or accidents that may occur as a result of using lifting slings made by other manufacturers.

If there is any doubt about the selection or use of a lifting sling, please contact your supplier.

Guldmann shall not be liable for faults or accidents due to incorrect use of the lifting sling, or for reasons of inadequate attention on the part of the carer or user.

Attaching the lifting sling

Place the straps from the lifting sling on the hooks on the lifting hanger. Start with the uppermost set of straps (from the back) and then take the lowest set of straps (from the legs).

Lifting hanger, 4 attachment points

Caution!

Be careful when attaching the lifting sling's straps on the hooks. Check that the straps have been correctly placed in the lifting hanger's hooks. When pressing the up button on the hand control to lift the user, check again that all straps remain correctly placed in the lifting hanger's hooks *(Fig. 1)*.

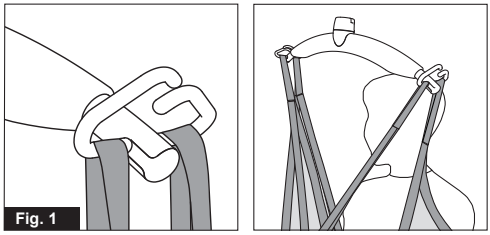


Fig. 1

Lifting hanger

Caution!
Be careful when attaching the lifting sling on the hooks. Check that the straps have been pulled completely through the rubber safety catch (A) and into place in the lifting hanger's hooks. When pressing the up button to lift the user, check again that all the straps remain correctly placed in the lifting hanger's hooks *(fig. 1a and fig. 1b).*

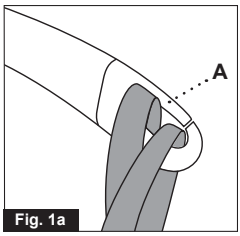


Fig. 1a

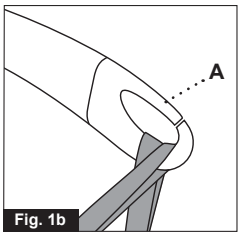
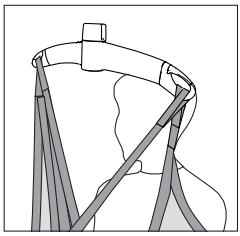


Fig. 1b



Lifting to and from a seated position
When lifting a user from e.g. a wheelchair, move the GH1 F towards the person to be lifted. The lifting hanger should be at the same height as the user's chest and should not be moved further in over the user than to approximately mid-thigh position.
Place the lifting hanger parallel to the user's shoulders.
Place the lifting sling behind the user's back between the back of the chair and the user's back. The center marks of the lifting sling should follow the user's spine.
Lead the leg straps along the outer sides of the user's shins and beneath the thighs between the hollow of the knees and the hip joints. Cross the leg straps in front of the user.
All four lifting straps are now ready to be attached. The lifting sling can now be mounted on the lifting hanger.

Lifting to and from lying position in bed
Bring the lifting hanger over the centre of the person to be lifted. Place the lifting hanger parallel to the user's shoulders.
Turn the user onto his or her side. The present sling should be placed so that its top is at the same height as the top of the user's head. Now position the sling over the user so that the center marks follow the user's spine. Turn the user onto his or her back and pull out the remaining part of the lifting sling. Place the leg straps beneath the user's thighs and cross them. All four lifting straps are now ready to be attached and the lifting sling can now be mounted on the lifting hanger. It is an advantage to elevate the head of the bed so that the user is sitting up.

For further information, please refer to the user manual for the lifting sling in question.

Important!
Only persons who have received competent instruction regarding the use of lifting equipment and fitting of slings should use the hoist.

Plan the move. Avoid leaving the user in the lifting sling unattended.

The hoist lifts quickly and powerfully. Before lifting, check that the user is completely free of his/her surroundings. The user's head, arms, hands and feet must not be in danger of becoming trapped. Be careful with any tubes and wires that are attached to the user. The user should not hold the lifting strap during the moving procedure as there is a risk of crushing between the strap's hook and the hoist. Check that the hand control and hand control cable is free of hanger, patient and other object before the hoist is activated up or down moved.

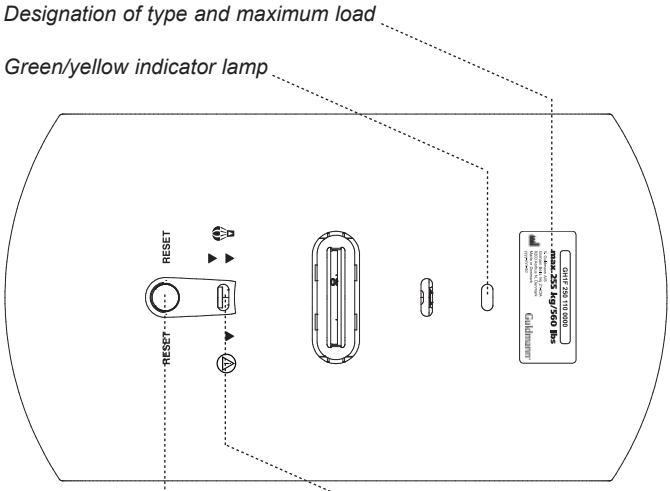
If the hoist is used correctly, the user should only be lifted to the extent that she/he is clear of the surface and should be moved at this height.

1.12 Swing kit

A swing kit must not be used in conjunction with GH1 F.

2.00 Description of functions

Information panel on the GH1 F bottom surface.



2.01 Pictograms

Emergency stop

Emergency lowering function

RESET Reset emergency stop

Warning - crushing hands

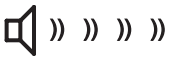
Release button

2.02 Indicator lamps and audio signals

Status	Indicator lamps	Audio signals	Possible GH1 F Functions		
			Up	Down	Emergency lowering
Off – stand by	Off				
All OK	Green		✓	✓	✓
Low battery	Yellow		✓	✓	✓
Fault on hoist	Yellow	Beeps at button activation			✓
Battery critical low	Yellow			✓	✓
Over load	Green	Beeps at button activation		✓	✓

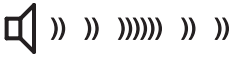
2.03 Audio signals

Short, consecutive audio signals



GH1 F's installation function has been activated.

Long, continuous audio signal



The installation/deinstallation sequence has been interrupted or completed.

2.04 **Operation**

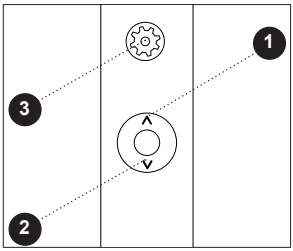
The GH1 F is switched on automatically when a button on the hand control is pressed.
The GH1 F is switched off automatically after approx. 8 minutes without activation.

The USB in the hand control is only intended for connection of PDA/Netbook with Guldmann SIC software and may only be used by Guldmann service team or by a Guldmann authorized person.

GH1F hand control

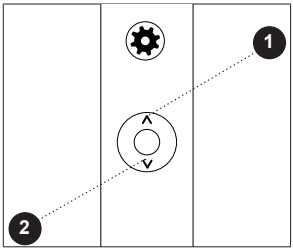
The hand control for GH1 F is used to control the following functions:

A. Installing and deinstalling the lifting module



1. Installing (lifting the hoist into position in rail)
2. Deinstalling (lowering the hoist from rail to trolley)
3. Installation mode on/off. Installation mode is on when cogwheel button is lit

B. Lifting and lowering a person



1. Lift
2. Lower

Note: There must be a load on the lifting strap corresponding to the weight of Guldmann's lifting hanger before GH1 F's lowering function will operate.

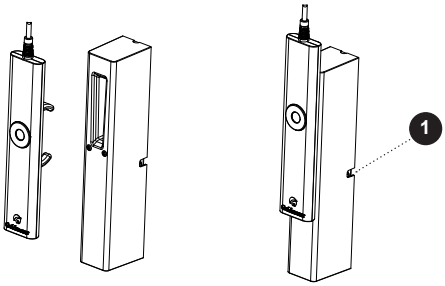
The lifting/lowering function will be switched off if the emergency stop/ emergency lowering system is activated *(point 3.01)*.

Charging / connection
GH1 F is recharged when the hand control is placed in the charging station. Always leave the hand control in the charging station when GH1 F is not in use. This guarantees GH1 F functionality and maintains the battery to ensure a long lifetime.

The power supply must be connected and switched on before charging can take place. A green indicator lamp (1) on the power supply indicates it is connected and switched on.

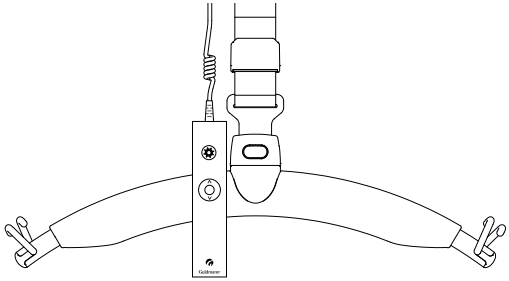
Push the rubber handle into the opening of the charging station. A click indicates that the hand control is placed correctly.

When the hand control is correctly placed in the charging station, you will receive an acoustic signal of 3 beeps. This means that the hoist is now charging.



The indicator lamp on the bottom of the hoist turns yellow if the charge status becomes low. The GH1 F then has a limited number of lifts available at a time and must be recharged.

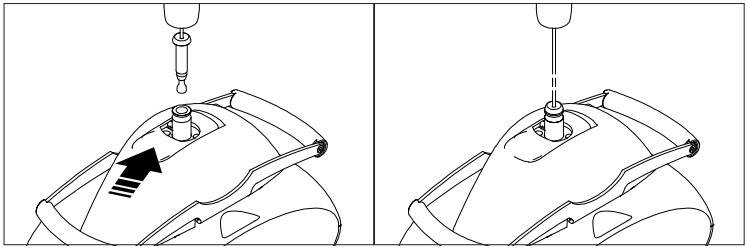
Placing of the hand control
The hand control can be placed on the hanger bar if necessary in connection with storage or transfer.



2.05 Installation

Preparation, installation
Place the transport trolley containing GH1 F vertically beneath the travelling trolley in the rail system. Check that there are no obstacles of any kind between GH1 F and the travelling trolley.

1. Attach the travelling trolley's anchor with cord to the locking mechanism on the top of GH1 F.



2. Choose the function "Installation" with the help of the cogwheel button at the top of the hand control ( ) The button will illuminate when in installation mode.

3. Installation will start by activating the hand control, by shortly pressing the button up ∧

4. Installation has been completed when GH1 F is automatically locked in the travelling trolley ( )

5. Press the cogwheel button again to complete installation mode. Button will stop illuminating when returned to normal mode

   We recommend steering/guiding GH1 F with the hanger so that it is free from the transport trolley during installation.

   The GH1 F lifting module must not be allowed to swing from side to side during installation.

2.06 **Deinstallation**

Where applicable, remove the lifting sling from the lifting hanger.
Place the transport trolley beneath the travelling trolley in the rail system.
Check that there are no obstacles of any kind between GH1 F and the transport trolley.

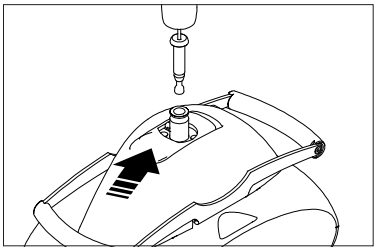
1. Lift the strap with the hanger towards the end stop on GH1 F

2. Choose the function “deinstallation” with the help of the cogwheel button at the top of the hand control ( ) when deinstallation mode is chosen, the cogwheel switch is lit (orange) and an acoustic sound is heard.

3. Deinstallation will start by activating the hand control, by shortly pessing the button down V

4. Deinstallation has been completed when GH1 F is on the transport trolley and the movement of the cord has stopped

5. Release the travelling trolley’s anchor with cord from the locking mechanism on the top of GH1 F.



6. Press the cogwheel button again to complete deinstallation mode. Button will stop illuminating when returned to normal mode

   We recommend steering/guiding GH1 F with the hanger into position on the transport trolley during deinstallation.

   Please note
   All deinstallation must be begun by briefly moving GH1 F (1-2 seconds) in an upward direction.

   It is not possible to begin the installation and/or deinstallation sequence for GH1 F when the load on the lifting strap exceeds the standard weight of the lifting hanger, e.g. if a person is sitting in the lifting sling.
   For the same reason a bath chair, a bath stretcher, Horizontal Hoist BS, and the cross lifting hanger must be removed before installing/deinstalling GH1 F.

   The installation/deinstallation function will be switched off if the emergency stop/emergency lowering function is activated *(point 3.01)*.

2.07 Lock, Travelling trolley for GH1 F

The locking mechanism/clutch on the travelling trolley is automatic and changes between a locked and an unlocked state. It changes states each time it is activated.
Avoid unnecessary contact with the lock.

Contact the Guldmann Service Team if it appears that the lock may be damaged.

2.08 Turbo speed

The GH1 hoists are equipped with an turbo speed feature, which can be switched on and off with the hand control. The turbo speed feature is switched on at delivery.

The turbo speed is active when the strap is unloaded (less than approx.. 30 kg / 66 lbs). When turbo speed is activated, the hoist increases the speed of the lifting strap to 80 mm / 3⅛ inch pr second. This allows the lifting hanger to be positioned in parking or returned quickly from parking unloaded.
When lifting there is a 5 seconds delay before turbo speed activates, when lowering there isn't any delay.

The turbo speed feature will be switched on or off by holding the up and down buttons simultaneously at the hand control for 5 seconds. If the turbo speed feature is switched on, an acoustic signal of 2 beeps will be emitted. If the turbo speed feature is switched off, 4 beeps will be emitted.

3.00 Transport/running in the rail system

GH1 F is moved around in the rail system by the helper/assistant.

Note
GH1 F may not be exposed to cold / heat shock. For instance do not bring a cold hoist into a warm bathroom or similar.

3.01 Safety functions

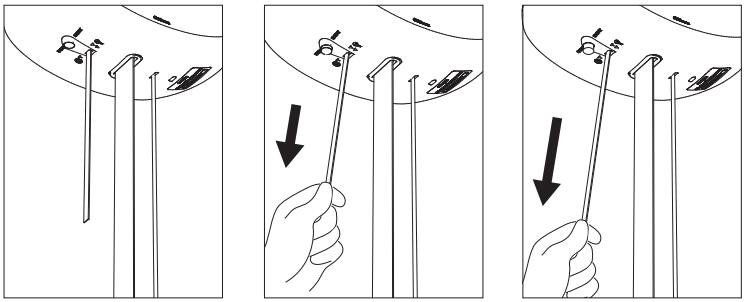
The emergency stop and emergency lower should only be used in the event of hoist failure or fault. The fault must be identified and rectified by a suitably qualified technician before the hoist can be taken back into use. The Emergency stop should not be reset unless by a suitably qualified technician.

Under no circumstances should the user attempt to reset and continue to use the hoist where the emergency stop has been activated due to fault or failure. The hoist issue should be referred for service and rectification by a suitably qualified technician.

Emergency stop and lowering strap

The red strap has the following functions:

- One pull: Emergency stop is activated.
- Constant pull: Emergency lowering is activated.

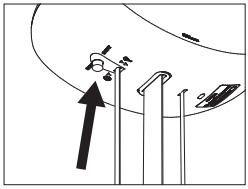


Emergency stop

If the GH1 F does not stop/react to the hand control when the GH1 F is in use, pull the red strap and the lifting/lowering functions (except emergency lowering) are deactivated. When the emergency stop is activated, the hoist will not function. The green lamp is switched off.

Reset emergency stop

Reset the emergency stop by pressing the yellow button on the bottom of the hoist.



The yellow button that appears when the emergency stop is pulled, must be pressed manually before the GH1 F is ready for use.

Emergency lowering function, electric

The emergency lowering function is identified as the essential performance. If the GH1 F fails, the electrical emergency lowering function is used to lower the user safely. The emergency lowering function is operated by a constant pull on the red strap that is used for the emergency stop.

When releasing the red strap, the emergency lowering function will be replaced by the emergency stop.

Note:

In case of a critical mechanical failure, the hoist contains a mechanical protective system that stops the strap reel.

Warning!

After the mechanical protective system has been activated in the GH1 F, the hoist MUST be serviced by a qualified technician or by the Guldmann Service Team.

3.02 Safety functions, installation/deinstallation

Installation/deinstallation
The installation/deinstallation sequence can be interrupted with the hand control at any time:

1. Press (again) UP ∧ to interrupt the installation/deinstallation sequence
2. Press (again) DOWN ∨ to interrupt the installation/deinstallation sequence

The installation sequence will be automatically interrupted if GH1 F meets an obstacle/resistance (≥ 20-25 kg) while being moved to the travelling trolley in the rail system, for instance when blocked by a foreign body during installation and must always be done unloaded.
If this happens, GH1 F will stop and then the installation sequence must be repeated. Do not start lifting a patient before the GH1 F is correctly installed to the trolley.

Resuming installation/deinstallation
When the obstacle has been removed, the installation or deinstallation sequence can be resumed, cf. point 2.05.

Activation of the emergency stop results in an interruption of the installation sequence

Activation of the emergency lowering results in an interruption of the installation sequence

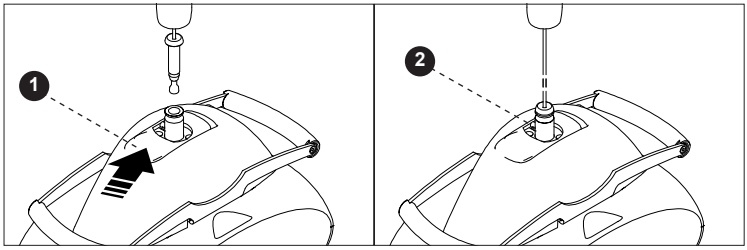
3.03 Installation lock

It is a condition for carrying out installation and deinstallation that the anchor is attached to GH1 F. The anchor is attached/released with the help of the push button on the top of GH1 F (1).

Important/precaution
The installation lock may only be operated/released when GH1 F has been deinstalled and placed on a firm surface, e.g. the transport trolley for GH1 F. The deinstallation sequence must have been completed before the installation lock is released. This means that the movement of the cord must have stopped and the installation motor must be inactive.

Attachment to the installation lock

- Push in the button (1)
- Attach the anchor with the cord from the travelling trolley
- Release the button and check that it returns fully to its original position



Releasing the installation lock

- Wait for deinstallation to end and until GH1 F has been placed on a firm surface, such as the transport trolley for GH1 F
- Push in the button (1)
- Release the anchor with cord from GH1 F

Place the anchor with cord at a suitable height beneath the travelling trolley.

Installation protection

There is a sensor/switch on top of GH1 F, which has a safety function (2) The hand control will be switched off when the sensor/switch is activated.

Avoid unnecessary contact with the sensor.

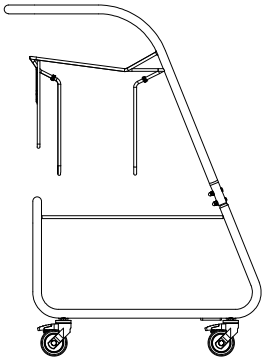
Contact the Guldmann Service Team if it appears that the sensor has been damaged.

4.00 Accessories

Transport trolley for GH1 F

The transport trolley is used to transport and store GH1 F with lifting accessories. There is a specially sewn bag at the bottom of the transport trolley to store lifting slings, the GH1 F power supply, and the manual. The bag can hold up to three lifting slings, depending on the type in question.

The power supply can be placed in the front pocket of the bag.



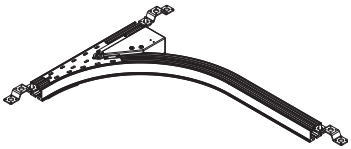
The cross lifting hanger can be hung from the hooks at the front of the transport trolley. Remove the lifting strap from the cross lifting hanger before installation/deinstallation.

The bag can be removed and washed if it is dirty. Follow the washing instructions on the bag. If necessary, contact your supplier to order a new bag if the old one is worn or damaged.

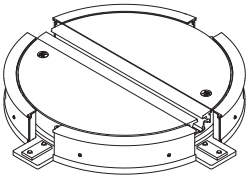
Note
We recommend lifting the lifting strap/lifting hanger towards the end stop on GH1 F before placing it on the transport trolley. This will protect the lifting strap against unnecessary wear during transport and while stored on the transport trolley.

Guldmann – Lifting slings and hangers
Obtain a product catalogue from Guldmann, or see our product range at www.guldmann.com where it is also possible to watch a video about the use of lifting slings and to download user manuals for our products.

Switch track, electrical
A switch track can be used in rail systems where it is used to change direction.



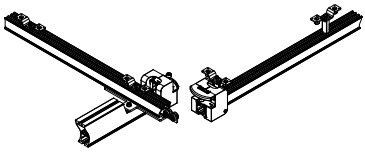
Turntable
The turntable is used in rail systems where the hoist needs to run in several directions.



The GH1 F hoist is placed in the center of the turntable. By pressing the switch, the turntable rotates 90°. Press again, and the turntable returns to the first position.

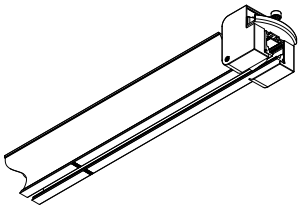
Safety
This product is mechanically protected against derailing and jamming.

Combi-lock, automatic



Intended use
The Combi-lock is used to move a person from one rail system to another.

Purpose
Use the Combi-lock when connecting one rail system to another.



The Combi-lock enables a secure connection to be made between two rail systems, e.g. when operating from a single-track rail system in the bedroom to a room-covering system in the bathroom.

The Combi-lock requires no manual operations.

Using the Combi-lock
When activating the Combi-lock, position the traverse rail opposite the fixed rail, where the locking mechanism is automatically activated (the rail systems lock together). Now it is possible to run the hoist from one rail system to the other. When the traverse rail is moved away from the fixed rail, the locking mechanisms are re-activated to secure the hoist and prevent it from running off the rail. The hoist must always be run completely past the Combi-lock before the traverse rail is moved away (the Combi-lock must be visible).

The rail systems are optimally connected at a max. distance of 1000 mm between the hoist and the Combi-lock; you may also refer to the marking label on the rail. At this distance, a secure and easy connection can be made. At a distance greater than 1000 mm, it is more difficult to position the two rail systems opposite one another. Please note that the connection works regardless of the position of the hoist in relation to the Combi-lock.

Safety
- In the event of an error while using the Combi-lock, discontinue its use. Contact the Guldmann Service Team or a certified technician to perform any necessary repairs. A defective Combi-lock can result in injury to both the user and helper.
- The locking mechanism in the Combi-lock must not be manually activated.
- The Combi-lock is mechanically secured to prevent de-railing and crushing.
- Do not touch the Combi-lock during activation/deactivation

Cleaning
See section 6.01

Daily maintenance
Ensure that the Combi-Lock is intact. Do not use the Combi-lock if it is damaged or defective. Instead, contact the Guldmann Service Team or a certified technician, as per Guldmann's instructions.

Battery
NiMH Battery 24V/2.1 Ah, Guldmann type number 550574.

5.00 Environmental conditions

Operation

The products operational environment:
– Operation temperatures between +10°C and +35°C (50°F and 95°F)
– A relative air humidity of between 30% and 70%
– An air pressure of between 700 hPa and 1060 hPa

Information is illustrated by symbols on packaging including:
– Fragile
– This side up

Beside temperature, the same environmental conditions apply for transportation and storage.
– Transport and storage temperatures between -10°C and +40°C (14°F and 104°F)

The equipment is not designed to be used at altitudes higher than 3000 m. above sea level.

Key to symbols on the packaging:

Transport and storage
Guldmann recommends that the products are always transported and stored in the original packaging.

6.00 Maintenance and storage

6.01 Cleaning and disinfection

We recommend that the products and the parts patients and caregivers can come in contact with, are cleaned with a damp cloth using warm water and a mild soap solution.

When disinfection is needed, use disinfectant wipes with up to a 85% solution of isopropyl, or a damp cloth using warm water and a disinfectant cleaner, e.g. an chlorine dissolving up to 1500 ppm.

If other chemicals and/or liquids with higher resolution should be used to clean or disinfect these products, please contact Guldmann providing the item´s safety sheet chemical composition for consideration.

Caution: Take great care to ensure that no liquids get inside the lift. The lift is not waterproof. Failure to protect the lift from liquids may result in damage to the lift and/or may cause personal injury.

6.02 Storage

See 5.00

For long-term storage of GH1 F the emergency stop must be activated. This ensures that the battery is not being discharged.

6.03 How to prevent/avoid corrosion?

When the products are mainly used in an corrosive environment, e.g. swimming pool, the products must be ordered with a special corrosion-preventive surface treatment. The preventive surface treatment must be replicated minimum anually.

6.04 The owner's daily maintenance duty

Check the lifting sling for wear and damage before use.
Do not use the lifting sling if it is damaged or defective.
Do not use GH1 F if the lifting strap or the rubber safety catch of the lifting hanger are damaged or defective.
Contact your supplier and order a new lifting sling or a replacement of the lifting strap. Replacement of the lifting strap must only be performed by the Guldmann Service Team or by a qualified technician in accordance with Guldmann's instructions.

6.05 Disposal of the GH1 F including battery

Local and national regulations on environmentally correct recycling must be observed. Batteries (type NiMH) must always be delivered to an approved recycling point.

7.00 Service and lifetime

7.01 Lifetime

The products have an expected lifetime of 15 years, on the condition of correct use and correct service inspections *(see section 7.02)*.

Estimated life time before change (status can be seen in the SIC program):
Lifting strap – 20.000 normal lift (85 kg/1000 mm)
Timing Belt – 20.000 normal lift (85 kg/1000 mm)
Battery – 20.000 normal lift (85 kg/1000 mm) or after 5 years, whichever comes first.

Replacement of components
Replacement of batteries, PCBs and lifting straps must be performed by a qualified service technician or the Guldmann Service Team.

No part of the equipment shall be serviced when in use with a patient.

7.02 Safety/service inspections

In accordance with international standard EN/ISO 10535 “Hoist for the transfer of disabled persons – Requirements and test methods” an inspection should be performed on the hoist at least once a year.
Guldmann recommends that regular safety/service inspection is performed at least once a year with regard to the pattern of usage.

Special guidelines must be observed when installing the rail system in corrosive environments, like swimmingpools, riding stables etc. An complete overhaul of the rail system (replacements of brackets, fixings, hanger, etc.) must be done at latest every 5 year.

Safety/service inspections of the products must be performed by a qualified service technician or the Guldmann Service Team. In connection with the purchase Guldmann may offer a service agreement for this inspection.

During the safety/service inspection a report must be prepared on what was checked and replaced. Parts that are worn or defective must be replaced with new parts from Guldmann. Spare parts drawings and documentation can be obtained from the manufacturer or supplier.

Documentation/checklist regarding safety/service inspection can be obtained from the manufacturer or supplier.

7.03 **Service inspection, travelling trolley for GH1 F**

Deinstall GH1 F and put it on the transport trolley before service inspections of the Travelling trolley for GH1 F are carried out.

1. **Visual control of the trolley**
- Check for wear, irregularities, or other types of damage to the trolley

2. **Remove cover/screen**
- Clean the trolley to remove dirt and other impurities
- Inspect and evaluate vital parts
- Inspect the cord in full length, if it shows any signs of wear it must be replaced with a new cord or complete Click Lock
- Every fourth year the Click Lock must be replaced with a new one (from the date it was installed)

3. **Replace cover/screen**

4. **Adjust the length of the cord in relation to the height of the rail** (if cord has been replaced)

5. **Carry out installation and deinstallation of GH1 F**
- Check all products function correctly

6. **Have new problems arisen or been found under item 5?**
- If new problems have arisen, return to item 2
- If there are no new problems, the service inspection has been completed

7. **When a service inspection including service work or exchange of components has taken place, the final check must comprise a weight test with the product's nominal load.**

7.04 **Trouble-shooting, GH1 F**

GH1 F lifting/lowering functions fail to respond when the hand control's up/down keys are pressed.
- Check that the emergency stop/emergency lowering device have not been activated
- Check that the hoist's indicator lamp is green when activating the hand control *(see section 2.04)*.

Is the product installed in the travelling trolley/rail system?
If NO
- Contact the Guldmann Service Team
The hand control may be defective

If YES
- Contact the Guldmann Service Team
GH1 F may have been incorrectly installed

The GH1 F does not respond to the hand control's keys

1. Check that the emergency stop is not activated *(see section 3.01)*.
2. Check that GH1 F has power supply and that the battery is recharged *(see section 2.04)*.
3. Check that the power supply is on and connected to the hand control.
4. Charge GH1 F *(see section 2.04)*.
5. Contact the Guldmann Service Team if the fault cannot be found and corrected.

7.05 FAQ's

Can GH1 F be installed/deinstalled while a person is sitting in the lifting sling?
No – GH1 F measures the load on the lifting strap before installation/deinstallation. If the load exceeds the weight of 20-25 kg, the sequence for installation/deinstallation cannot be activated and the GH1 F will start beeping.

8.00 Classification

CE marking

Medical Device Class I in accordance with EU MDR Regulation

Type B in accordance with IEC/EN 60601-1

UK Responsible Person
European Device Solutions Ltd. 15 Coanwood Drive, Whitley Bay, Tyne & Wear, NE25 9GB, United Kingdom.
Email: info@europeandevicesolutions.co.uk
Tel: +44-754-559-5464

Read the manual before use

Must not be disposed of as standard household waste, must be recycled.

Do not incinerate and put battery on fire

Battery recycling, nickle-metal hybride battery

Ni-MH

Class II equipment . . . . . Non-permanent installation without protective ground

The equipment is surface-contacting medical devices which are in contact with intact skin and the duration of contact is limited exposure - 24h.

The applied parts, identified as the buttons on the ceiling hoist, the hand control, lifting strap and power supply, provide means of protection against electric shock.

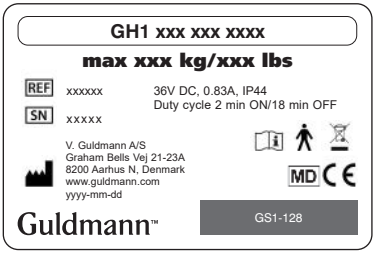
The equipment is not suitable for use in the presence of flammable mixtures.

Degree of protection against harmful ingress of liquids (water)

Lifting module. . . . . IP 20
Hand control. . . . . IP 42

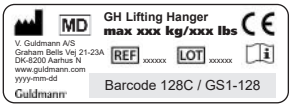
Examples of labels

Lifting module



Power supply

Lifting hanger

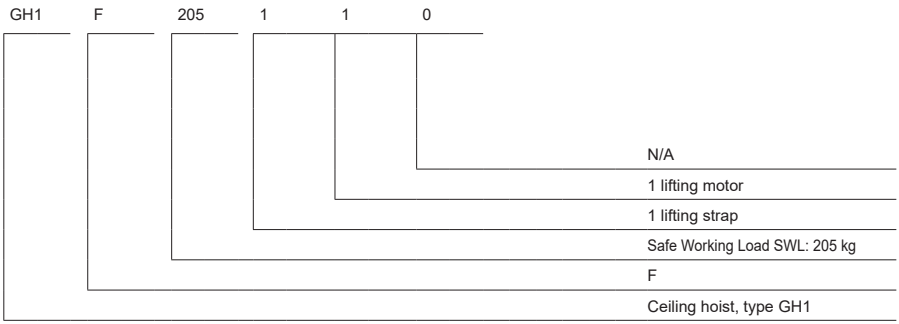


Hand control

9.00 Technical specifications

GH1 Lifting modules, configurations						Options									
Guldmann hoist type	Product line	Load in kg	Number of lifting straps	Number of lifting motors	Number of horizontal drive motors	IR remote	Service module	CLM module	Scale module	WiFi module	Class III scale	Trainer module	Coating	UL	Charging in the handcontrol
GH1	(x)	xxx	x	x	x	Configuration code (xxxxx)									
GH1	F	175	1	1	0								•		•
		205	1	1	0								•		•
		255	1	1	0								•		•

Example: GH1 F 205 110 (xxxxx)



Functions

Lifting capacity, SWL . . . . 175 kg (385 lbs), 205 kg (450 lbs), 255 kg (560 lbs)
Operation . . . . . Hand control
Sound level . . . . . .52 dB (A)

Lifting speed

85 kg (187 lbs) load . . . . . 40 mm/sec (1½ inch sec.)
150 kg (330 lbs) load . . . . . 40 mm/sec (1½ inch sec.)
Max capacity load, SWL . . . . . 40 mm/sec (1½ inch sec.)
Max. 30 kg (66 lbs) load . . . . . 40/80 mm/sec
. . . . . (1½ / 3⅛ inch sec.)

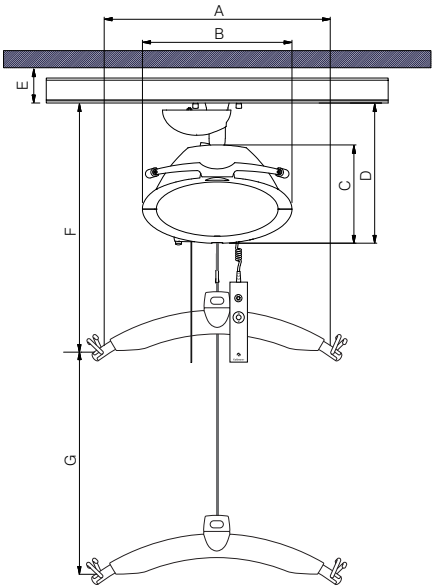
Weight and materials

SWL . . . . . 175 kg (385 lbs), 205 kg (450 lbs), 255 kg (560 lbs)
Hoist . . . . . 11.0 kg (24.2 lbs)
Hoist including trolley . . . . . 12.2 kg (26.8 lbs)

Covers, top and bottom . . . . . shock-proof UL 94 V-O fire-resistant recirculates platic

Dimensions

A . . . . . 530 mm (20¾ inch)
B . . . . . 350 mm (13¾ inch)
C . . . . . 230 mm (9 inch)
D . . . . . 330 mm (13 inch)
E, min . . . . . 82 mm (3¼ inch)
F, min . . . . . 580 mm (22¾ inch)
G . . . . . 2500 mm (98 inch)
Depth of hoist . . . . . 194 mm (7¾ inch)



Safety

Emergency stop . . . . . Yes
Emergency lowering device . . . . . Yes, electrical
Control of lifting strap . . . . . Yes
Cut-off angle . . . . . 45° along the rail
. . . . . 10° across the rail

Electronics

On/off . . . . . Automatic when used. Soft start/stop
Overload protection . . . . . Automatic
Low battery protection . . . . . Automatic
Power supply . . . . . 36 V DC, 0.83 A
Supply voltage . . . . . 100-240 V AC, 47-63 Hz

Battery . . . . . 24 V NiMH
SWL: 175 kg (385 lbs), 205 kg (450 lbs), 255 kg (560 lbs). . . . . 2.1 Ah

Continuous operation with short time loading with
3 hours without recharging . . . . . 10/90 % (2 min. operation/18 min. pause)

Max number of lifts in series with:
85 kg (187 lbs). . . . . 55/1000 mm (39¼ inch)
175 kg (385 lbs). . . . . 39/1000 mm (39¼ inch)
205 kg (450 lbs). . . . . 32/1000 mm (39¼ inch)
255 kg (560 lbs). . . . . 21/1000 mm (39¼ inch)

Max charging time at 25ºC (77ºF) . . . . . 3 hours

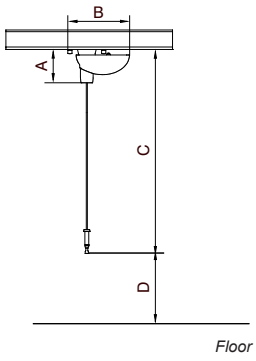
Operating temperature. . . . . 10°C - 35°C (50°F - 95°F)

Degree of protection against harmful ingress of liquids (water)

Lifting module. . . . . IP 20
Hand control. . . . . IP 42

Travelling trolley for GH1 F

A . . . . . 98 mm (3⅞ inch)
B . . . . . 166 mm (6½ inch)
C*, max.. . . . . 2800 mm (110 inch)
D, min. . . . . 650 mm (25½ inch)
D, max. . . . . 750 mm (29½ inch)
Depth of travelling trolley. . . 84 mm (3¼ inch)



*Cord length C adapted to height of rail
during installation

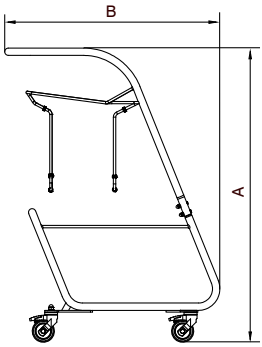
Max. load. . . . . 255 kg (560 lbs)

Weight:
Travelling trolley (with the
exclusion of lifting modules
GH1 F). . . . . 1.2 kg (2.5 lbs)

Transport trolley for GH1 F

A . . . . . 1005 mm (39½ inch)
B . . . . . 735 mm (28¾ inch)
Depth of transport trolley . . 485 mm (19 inch)
Capacity, bag. . . . . 2-3 slings
. . . . . 2-3 lifting hangers
Capacity, max . . . . . 25 kg (55 lbs)

Weight:
Trolley including bag . . . . . 10.4 kg (23 lbs)



10.00 Approvals

10.01 EU-Declaration of conformity

The product is manufactured in compliance with regulation (EU) 2017/745 of the European parliament and of the Council of 5 April 2017, as medical device Class I.

11.00 Environmental policy statement – V. Guldmann A/S

Guldmann is continuously working towards ensuring that the company's impact on the environment, locally and globally, is reduced to a minimum.

It is Guldmann's goal to:

- Comply with the current environmental legislation (e.g. WEEE and REACH directives)
- Ensure that we, at the widest possible range, use RoHS compliant materials and components
- Ensure that our products do not have an unnecessary negative impact on the environment regarding use, recirculation or disposal
- Ensure that our products contribute to a positive working environment in the places they are utilised

Inspections are made annually by the Department for Nature and Environment from the Municipality of Aarhus using the Danish Environmental Protection Act, section 42 as a reference.

12.00 EMC Information

Tabel 1

Guidance and manufacturer's declaration – electromagnetic emissions

The GH1 F is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH1 F should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The GH1 F uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Class A	The GH1 F is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Tabel 2

Guidance and manufacturer's declaration – electromagnetic immunity

The GH1 F is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH1 F should assure that it is used in such an environment.

IMMUNITY test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % U_T (>95 % dip in U_T) for 0,5 cycle	<5 % U_T (>95 % dip in U_T) for 0,5 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the GH1 F requires continued operation during power mains interruptions, it is recommended that the GH1 F be powered from an uninterruptible power supply or a battery.
	40 % U_T (60 % dip in U_T) for 5 cycles	40 % U_T (60 % dip in U_T) for 5 cycles	
	70 % U_T (30 % dip in U_T) for 25 cycles	70 % U_T (30 % dip in U_T) for 25 cycles	
	70 % U_T (30 % dip in U_T) for 25 cycles	<5 % U_T (>95 % dip in U_T) for 5 s	
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	The power frequency magnetic field should be measured in the intended installation location to assure that it is sufficiently low.

NOTE U_T is the a.c. mains voltage prior to application of the test level.

Tabel 4

Guidance and manufacturer's declaration – electromagnetic immunity

The GH1 F is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH1 F should assure that it is used in such an environment.

IMMUNITY test	IEC 60601 TEST LEVEL	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz 3 V/m 80 MHz to 2,5 GHz	3 Vrms 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the GH1 F, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d=1,2\sqrt{P}$ $d=1,2\sqrt{P}$ 80 MHz to 800 MHz $d=2,3\sqrt{P}$ 800 MHz to 2,5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [a] should be less than the compliance level in each frequency range [b]□ Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the
GH1 F is used exceeds the applicable RF compliance level above, the GH1 F should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the GH1 F.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Tabel 6

Recommended separation distances between portable and mobile RF communications equipment and the GH1

The GH1 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the GH1 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the GH1 as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter m**		
	150 kHz to 80 MHz $d=1,2\sqrt{P}$	80 MHz to 800 MHz $d=1,2\sqrt{P}$	800 MHz to 2,5 GHz $d=2,3\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

13.00 Warranty and service conditions

A. Warranty

Guldmann warrants its equipment is free from material defects under normal use, and will perform substantially in accordance with the specifications set forth in documentation provided with the equipment.

This express warranty shall be in effect for one year from the date of original purchase and installation (the “Warranty Period”). If a valid claim is made during the Warranty Period for malfunction or equipment defect, Guldmann will repair or replace the equipment at no additional cost to you. Guldmann retains sole discretion as to whether the equipment will be repaired or replaced.

The warranty does not cover any part of the equipment which has been subject to damage or abuse by the user or others. The warranty does not cover any part of the equipment which has been altered or changed in any way by the user or others. Guldmann does not warrant that the lifting device functions will meet your requirements, be uninterrupted or error free.

The warranty set forth is in lieu of all other express and implied warranties, whether oral, written or implied, and the remedies set forth above are your sole and exclusive remedies. Only an authorized officer of Guldmann may make modifications to this warranty, or additional warranties binding on Guldmann. Accordingly, additional statements such as advertising or presentations, whether oral or written, do not constitute warranties by Guldmann.

This warranty shall be null and void if the equipment is operated and maintained in any manner inconsistent with its intended use or the instructions provided with the product. Further, in order for the warranty to remain in effect for the full Warranty Period, all service to the equipment must be provided by a Guldmann certified technician. Any parts or components repaired or replaced by a Guldmann certified technician will be guaranteed for the remainder of the Warranty Period.

Only for USA

This warranty shall be null and void if the equipment is operated and maintained in any manner inconsistent with its intended use or the instructions provided with the product. Further, in order for the warranty to remain in effect for the full Warranty Period, all service to the equipment must be provided by a Guldmann Certified Technician. A Guldmann Certified Technician is a technician who has successfully completed Guldmann Service Training, and who holds a valid Service Training Certificate from Guldmann, and is in possession of a valid password to access Guldmann's Service and Information Console (SIC). A Guldmann Service Training Certificate and SIC password are valid for three years (only USA) from the date the technician is first certified. Thereafter, the technician must undergo re-certification training to obtain a new valid certificate and password. Any parts or components repaired or replaced by a Guldmann Certified Technician will be guaranteed for the remainder of the Warranty Period. In the event the warranty is rendered null and void, the purchaser shall indemnify and hold Guldmann harmless of and from any and all claims or liability arising as a result of equipment malfunction or misuse.

B. **Service or Repair**

Contact Guldmann Repair for an authorization to return any defective item during the Warranty Period. You will be provided with a return authorization number and address for returning the item for warranty service or replacement. Do not return items to Guldmann under warranty without receiving a Return Authorization Number.

If mailing the item, pack it carefully in a sturdy carton to prevent damage. Include your Return Authorization Number, a brief description of the problem and your return address and phone number. Guldmann does not assume the risk of loss or damage while in transit, so it is recommended you insure the package.

Time to care

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