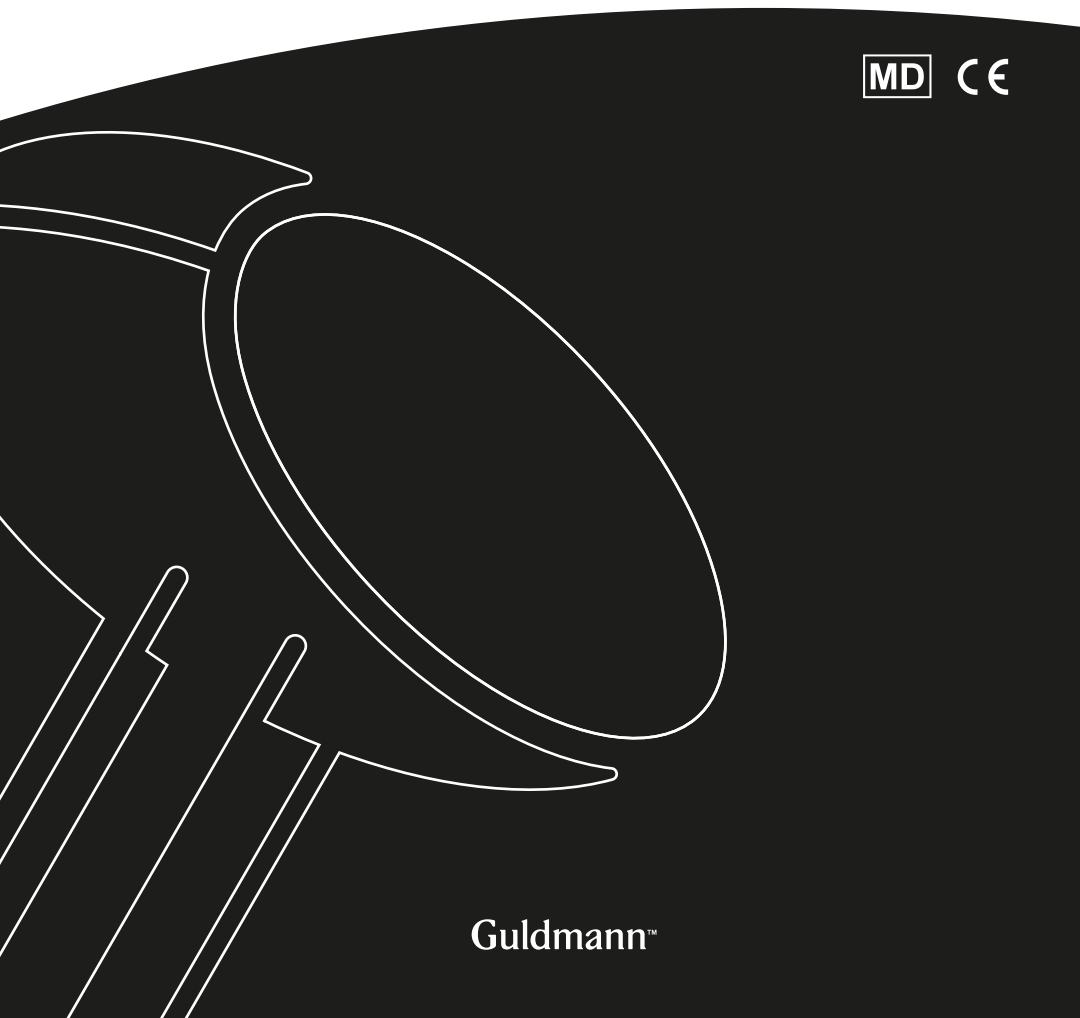




GB/US GH1/GH1+/GH1 Q/GH1+ Q

User manual – vers. 104.0



Guldmann™

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1.00	Purpose and intended 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 lifting module is intended for lifting and transferring a person with disabilities and for walking training.
1.03	Area of use GH1 is suitable for professional use in hospitals, nursing homes, rehabilitation centers, institutions, Riding schools, swimming pools, mortuaries and in private homes and buildings, where operators with medical/clinical training are continually on site or on call.
1.04	Conditions for use GH1 is a ceiling-mounted hoist that moves in a rail system. GH1 is designed to be used with a variety of lifting hangers and lifting slings. The use of the GH1 is subject to the following: • The GH1 should only be used by trained personnel. • The maximum nominal load, 175 kg (385 lbs), 205 kg (450 lbs), 255 kg (560 lbs) respectively, must not be exceeded (<i>section 1.05</i>). • 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 (<i>section 1.10</i>). • The hoist is used with a Guldmann lifting sling or with other suitable slings (<i>section 1.11</i>).
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 appears during use of the hoist, stop using the hoist and contact 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 2.04*).
- 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 needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in Chapter 10 EMC Information.
- Portable and mobile RF communications equipment can affect the GH1.
- 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 lifting module as well as electrical products in the nearby surroundings.
- The GH1 should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the GH1 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 3.00 (Environmental conditions).
- The GH1 Q cannot be used in rail systems with the Combi-lock and/or switch track.
- GH1 is not intended for use in oxygen rich environments.
- 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 GH1 system

Read the label which indicates the maximum load limits for each component. The component, e.g. lifting hanger, lifting sling, etc. labelled with the lowest load limit determines the maximum load limit for the entire system.

This maximum load limit must not be exceeded.

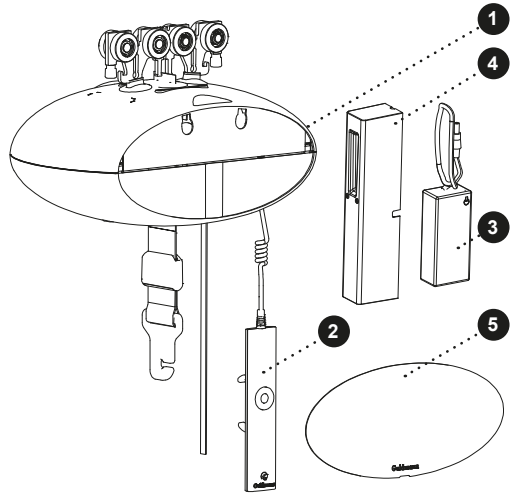
Please note that the max load may change when different components are used, such as lifting hangers, lifting slings, etc.

Visual check of the GH1

If the GH1 is thought to be damaged upon reception, the GH1 must not be used before it has been checked and approved by a qualified person or the Guldmann Service Team.

Contents of the box

1. GH1 hoist
2. Hand control
3. Transformer
4. Charging station
5. Side covers
6. Manual
7. Label for rail system

**Button for reset of emergency stop**

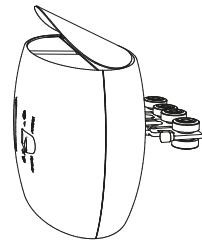
GH1 is delivered with the emergency stop activated in order to ensure that the battery is not being discharged during long-term storage. Reset the emergency stop by pressing the "RESET" button on the bottom of the hoist (see point 2.04).

Mounting of side cover

GH1 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 2.04).

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



1.08

Installing a new GH1 hoist in an existing rail system

Please notice, when installing a new GH1 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 bracket according to max load).

1.09

Installing / deinstalling GH1 Q in the rail

The GH1 Q lifting module has a quick-release system which makes it very simple to click-on and click-off the lifting module from the rails if it from time to time is necessary to relocate the lifting module to another room or residence. The moving of the lifting module can be accomplished without any use of tools.

Installing GH1 Q

1. The travelling trolley is mounted in the rail.
2. Turn GH1 Q 90° in relation to the rail as illustrated and connect it to the travelling trolley.
3. Turn GH1 Q as illustrated until the hoist is parallel to the rail.



Fig. 1

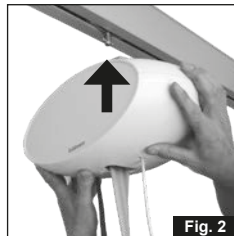


Fig. 2

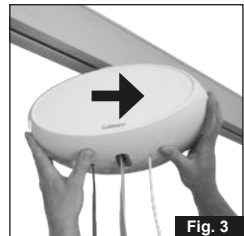


Fig. 3

4. Stop pressing up and allow the safety lock to engage.
5. GH1 Q ceiling hoist is now ready to use.

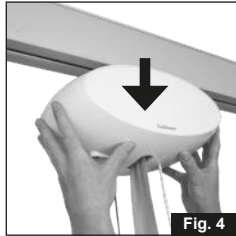


Fig. 4

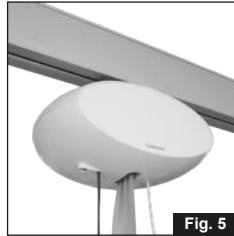


Fig. 5

Deinstalling GH1 Q

1. Press GH1 Q up to release it from the travelling trolley.
2. Turn GH1 Q 90° as illustrated.
3. Release and lift down GH1 Q.

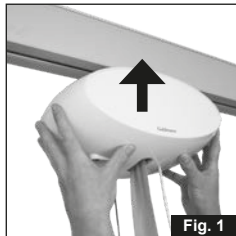


Fig. 1

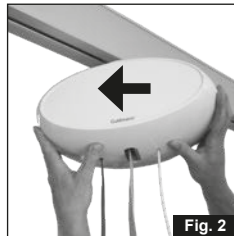


Fig. 2

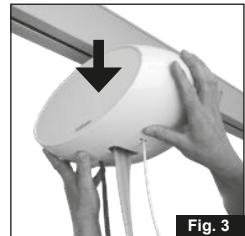


Fig. 3

1.10

Power supply

GH1 is equipped with a battery that requires regular recharging. The power supply for the transformer and the charging station must be connected by Guldmann Service Team or by a qualified engineer. The transformer supplied 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.

Class II equipment

Mobile equipment is class II equipment (marked with double-encased symbol) and can be connected to the mains direct by the user.

Equipment is disconnected from Supply Mains by detaching the mains plug from the wall outlet.

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.

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

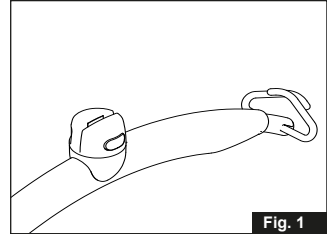


Fig. 1

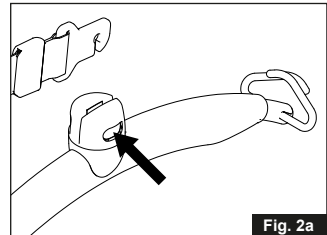


Fig. 2a

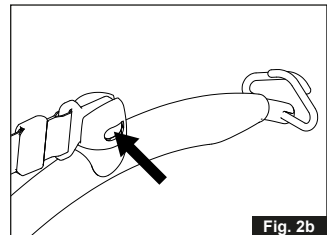


Fig. 2b

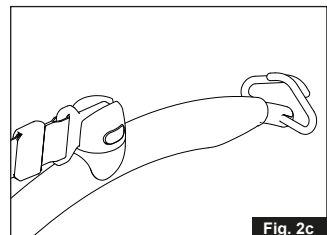


Fig. 2c

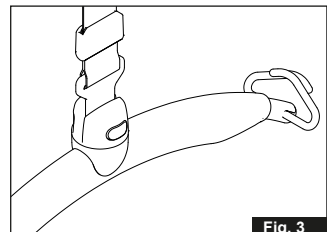


Fig. 3

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.

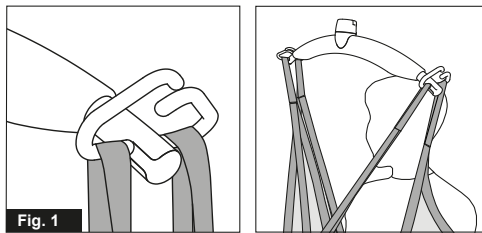
Guldmann shall not be liable for faults or accidents due to incorrect use of the lifting sling, or for reasons of inadequate attention on the part of the carer or user.

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!**

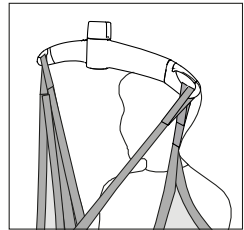
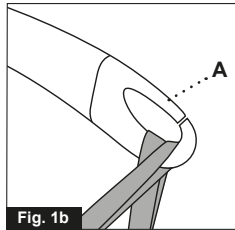
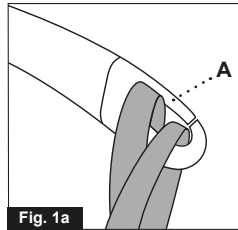
Be careful when attaching the lifting sling's straps on the hooks. Check that the straps have been correctly placed in the lifting hanger's hooks. When pressing the up button on the hand control to lift the user, check again that all straps remain correctly placed in the lifting hanger's hooks (Fig.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



Lifting to and from a seated position

When lifting a user from e.g. a wheelchair, move the GH1 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 Basic High 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.

The swing function is used in conjunction with a transfer e.g. through a door from one lifting module to another.

Note: The swing adapter must be ordered separately.

Installation of swing adapter

1. Before starting a lift involving a swing transfer the swing adapter (Fig. 1) must be installed on the lifting hanger. (fig. 2 til 5).
2. Hold the lifting hanger in the right hand and press the yellow button using the thumb (fig. 2).
3. Insert the swing adapter in the slot on the lifting hanger top cover with the open side facing down (Fig. 3a, 3b) and release the yellow button.
4. Rotate the swing adapter to a vertical position (fig. 4).

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 swing adapter can rotate freely.

5. Install the strap attachment to the swing adapter by sliding the open side of the strap attachment over the flat area of the swing adapter (fig. 5).
6. Rotate the strap attachment and ensure that it moves up on the circular portion of the swing adapter (fig. 6).



Fig. 1



Fig. 2



Fig. 3a



Fig. 3b



Fig. 4



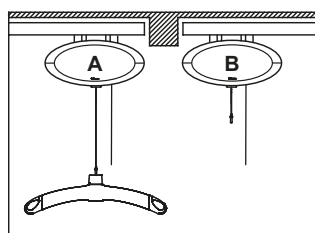
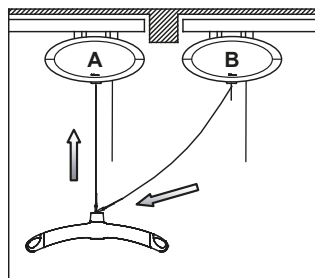
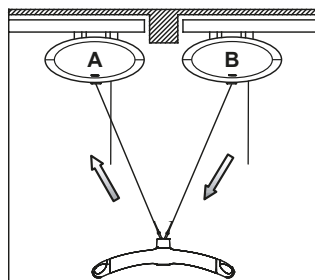
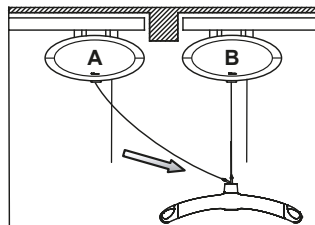
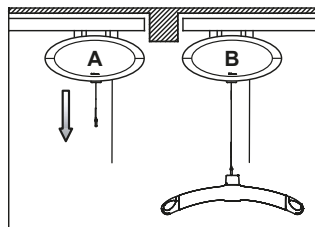
Fig. 5



Fig. 6

1. Bring the two hoists as close together as possible. Adjust the height of the lifting hanger on hoist B so that the transfer can be done without the user touching the floor during the transfer from one hoist to another.
2. Take the free lifting strap from hoist A and secure it to the swing adapter on the lifting hanger (see 1.10 figures 5 and 6).
In order to lower the free lifting strap on hoist A a slight pull must be applied to the strap.
3. Lower the lifting hanger using hoist B while lifting the strap on hoist A to perform the swing transfer. The transfer has been completed when there is no load on the lifting strap on hoist B.
4. Disconnect the lifting strap on hoist B from the lifting hanger and raise the strap on hoist B out of the way.
5. Move the lifting hanger from hoist A to operating height and the doorway transfer is complete.

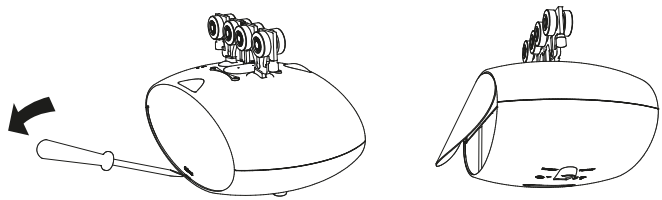
Note: There must be a load on the lifting strap corresponding to the weight of Guldmann's lifting hanger before GH1's lowering function will operate.



Exchange of side cover

If you want to change the appearance of GH1, 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 (*see point 2.04*).

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 by bending the cover slightly and placing it in the groove on the side of GH1.

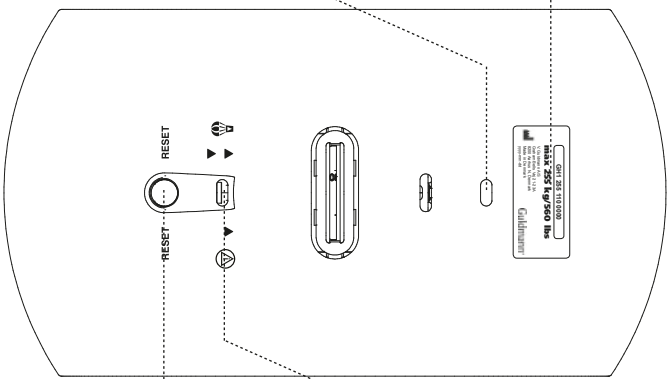


Description of functions

Information panel on the GH1 bottom surface.

Designation of type and maximum load

Green/yellow indicator lamp



Strap for activating emergency stop and emergency lowering device

Button for resetting the emergency stop

2.01 Pictograms



Emergency stop



Emergency lowering function

RESET

Reset emergency stop



Warning - crushing hands

2.02 Indicator lamps and audio signals

Status	Indicator lamps	Audio signals	Possible GH1 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		✓	✓
Hand control placed in charging station	On	3 beeps for charging			

2.03 Operation

GH1+ and GH1+ Q will always feature data transmission. For more information see MyGuldmann.

Hand control

The GH1 is switched on automatically when a button on the hand control is pressed.

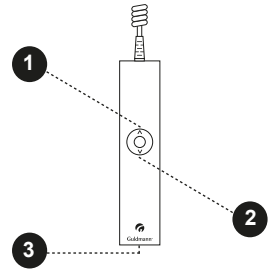
The GH1 is switched off automatically after approx. 8 minutes without activation.

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.

GH1 Hand control

1. Lift
2. Lower
3. PDA interface (micro USB)

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



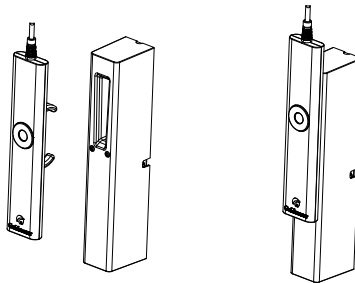
Charging / connection

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

The transformer must be connected and switched on before charging can take place. A green indicator lamp on the transformer 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.

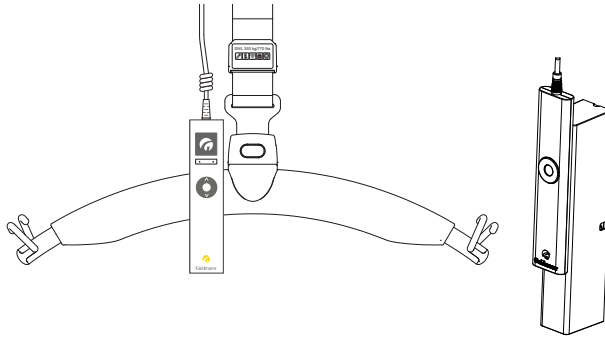
When the hand control is correctly placed in the charging station, you will receive an acoustic signal of 3 beeps. This means that the hoist is now charging.



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

Placing of the hand control

When GH1 is not in use the hand control must always be placed in the charging station. The hand control can also be placed on the lifting hanger if this is necessary in connection with a transfer.



2.04

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 / 3 1/4 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.

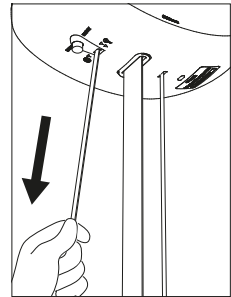
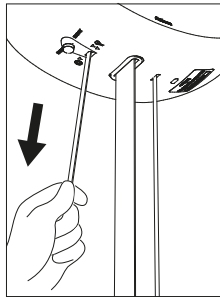
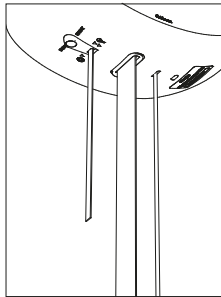
The turbo speed feature will be switched on or off by holding the up and down buttons simultaneously at the hand control for 5 seconds. If the turbo speed feature is switched on, an acoustic signal of 2 beeps will be emitted. If the turbo speed feature is switched off, 4 beeps will be emitted.

The emergency stop and emergency lowering device should only be used in an emergency. In the event that it is necessary to use the safety functions, the fault must be identified and rectified before the GH1 is taken into use again. Please contact your supplier.

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 does not stop/react to the hand control when the GH1 is in use, pull the red strap and the lifting/lowering functions (except emergency lowering) are deactivated.

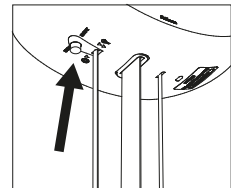
When the emergency stop is activated, the hoist will not function. The green lamp is switched off.

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 is ready for use.

After deactivating the emergency stop, activate the hand control twice.



Emergency lowering function, electric

The emergency lowering function is identified as the essential performance. If the GH1 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, the hoist **MUST** be serviced by a qualified technician or by the Guldmann Service Team.

2.06

Accessories

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.

Extension strap

The extension strap is used where the distance between the lower part of the rails and the floor exceeds 3.5 m. The extension strap is available as an accessory.

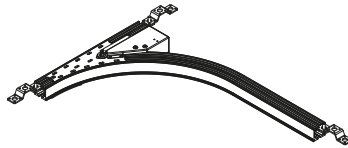
Swing adapter

The swing function is used in conjunction with a transfer, e.g. through a door from one lifting module to another.

Switch track, electrical

(Must not be used with GH1 Q)

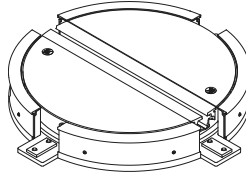
A switch track can be used in rail systems where it is used to change direction.



Turntable

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

The GH1 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.

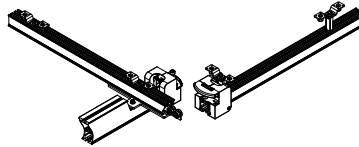


Safety

This product is mechanically protected against derailing and jamming.

Combi-lock, automatic

(Must not be used with GH1 Q)



Intended use

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

Purpose

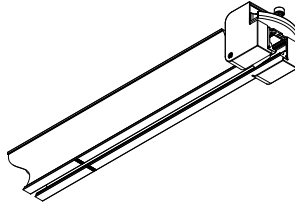
Use the Combi-lock when connecting one rail system to another.

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 4.01

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.

Power supply

Power supply, Guldmann item number 554204.

3.00

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:

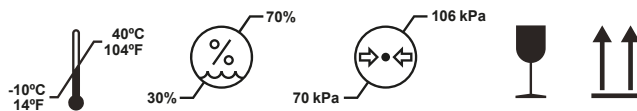
- Fragile
- This side up

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.

4.01**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.

4.02**Storage**

See 3.00

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

4.03**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 annually.

4.04**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 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.

4.05**Disposal of the GH1 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.

5.01

Lifetime

The products have an expected lifetime of 15 years, on the condition of correct use and correct service inspections, see section 5.02.

Estimated life time before change (status can be seen in the SIC program):

Lifting strap – 20.000 normal lifts (85 kg/1000 mm)

Timing Belt – 20.000 normal lifts (85 kg/1000 mm)

Battery – 20.000 normal lifts (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.

5.02

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. A complete overhaul of the rail system (replacements of brackets, fixings, hanger, etc.) must be done at least 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.

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

1. Check that the emergency stop is not activated (*see section 2.04*).
2. Check that GH1 has power supply and that the battery is recharged (*see section 2.02*).
3. Check that the transformer is switched on and connected to the charging station.
4. Place the hand control in the charging station and recharge GH1 (*see section 2.03*).
5. Contact the Guldmann Service Team if the fault cannot be found and corrected.



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.

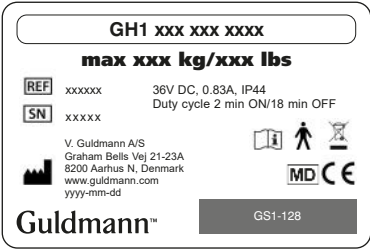
The equipment is not suitable for use in the presence of flammable mixtures.

Degree of protection against harmful ingress of liquids (water)

Lifting module.	IP 44
Hand control.	IP 44
Charging station.	IP 20
Power supply	IP 20

Examples of labels

Lifting module



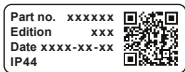
Power supply



Lifting hanger



Hand control



GH Lifting modules configurations

GH Lifting modules configurations			Options													
Guldmann hoist type	Lifting speed, mm/s (Normal / Turbo)	Load in kg	Wi-Fi enabled	Data transmission shown on MyGuldmann	Hand control with display	Function on demand	Scale	Class III scale	Trainer	Coating	UL	Automatic charging	Charging in docking station	Positioning lock	IR remote ^{x)}	Horizontal drive motors ^{y)}
GH1	40/80	175								•			✓			
		205								•			✓			
		255								•			✓			
GH1 Q		150								•			✓			
		175								•			✓			
		205								•			✓			
GH1+		255								•			✓			
		175	✓	✓						•			✓			
		205	✓	✓						•			✓			
GH1+ Q		255	✓	✓						•			✓			
		175	✓	✓						•			✓			
		205	✓	✓						•			✓			
			255	✓	✓					•			✓			

• Optional

✓ Always included

x) Not compatible with UL

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 / 3¾ inch sec.)

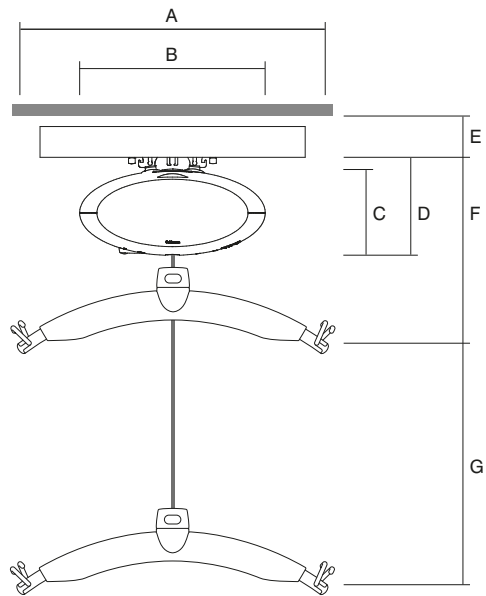
Weight and materials

SWL 175 kg (385 lbs), 205 kg (450 lbs), 255 kg (560 lbs)
Own weight 8.0 kg (17.6 lbs)

Covers, top and bottom Impact-resistant UL 94 V-0 flame
. retardant recyclable plastic

Dimensions

A 580 mm (22¾ inch)
B 350 mm (13¾ inch)
C (GH1 / GH1 Q) 156 mm / 187 mm (6⅓ / 7⅓ inch)
D (GH1 / GH1 Q) 184 mm / 196 mm (7¼ / 7¾ inch)
E, min. 82 mm (3¼ inch)
F, min (GH1 / GH1 Q) 415 mm / 427 mm (16⅓ / 16 ¾ 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, transformer	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
SWL: 175 kg (385 lbs), 205 kg (450 lbs), 255 kg (560 lbs)	21/1000 mm

Max charging time at 25°C (77°F):	
SWL: 175 kg (385 lbs), 205 kg (450 lbs), 255 kg (560 lbs)	3 hours

Operating temperature	10°C - 35°C (50°F - 95°F)
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Degree of protection against harmful ingress of liquids (water)

Lifting module	IP 44
Hand control	IP 44
Charging station	IP 20
Power supply	IP 20

8.00 Approvals

8.01 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.

8.02 **Certificates**

EN/ISO10535 136863-1 rev 1

9.00 **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.

10.00 **EMC Information**

Tabel 1

Guidance and manufacturer's declaration – electromagnetic emissions

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

Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The GH1 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 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 is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH1 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 requires continued operation during power mains interruptions, it is recommended that the GH1 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 is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH1 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, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d=1,2\sqrt{Pd}=1,2\sqrt{P}$ 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 is used exceeds the applicable RF compliance level above, the GH1 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.

^{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.

11.00 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 that has been subject to damage or abuse by the user or others. The warranty does not cover any part of the equipment that 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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