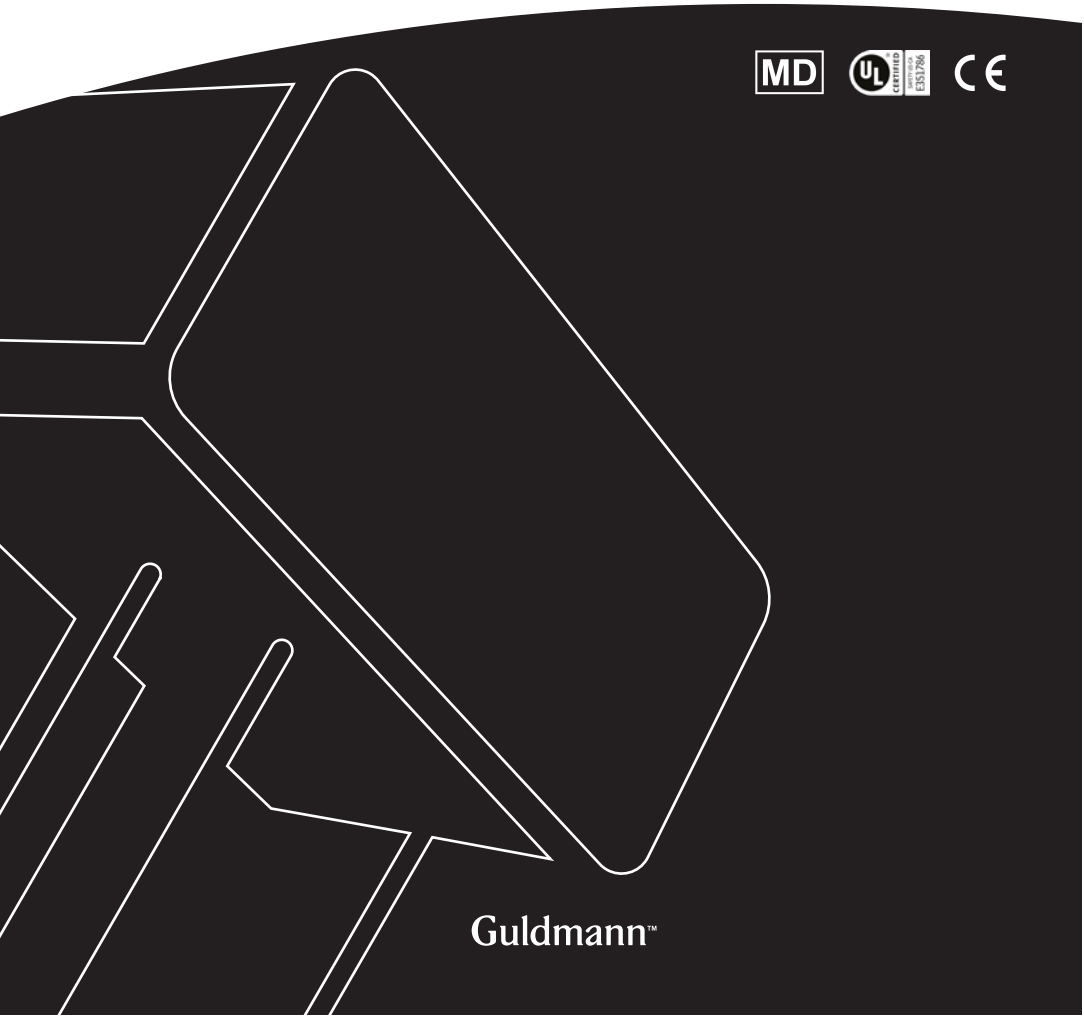
GB/US . . . . GH3/GH3+ Ceiling Hoist

User manual – vers. 107.0



Guldmann™

GH3/GH3+ Ceiling Hoist

Item nos:
5xxxxx

1.00 GH3 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 GH3 lifting module is intended for lifting and transferring a user with disabilities and for gait training.

1.03 Area of use

GH3 is suitable for professional use in hospitals, nursing homes, rehabilitation centers, institutions, Riding schools, swimming pools, mortuarys and in private homes and buildings, where healthcare professionals with medical/clinical training are continually on site or on call.

1.04 Conditions for use

GH3 is a ceiling-mounted hoist that moves in a rail system.
GH3 is designed to be used with a variety of lifting hangers and lifting slings.

The use of the GH3 is subject to the following:

- The GH3 should only be used by trained personnel.
- The maximum nominal load, 200 kg (440 lbs), 250 kg (550 lbs), 275 kg (605 lbs), 300 kg (660 lbs), 350 kg (770 lbs), 375 kg (825 lbs), 400 kg (880 lbs) respectively, must not be exceeded.
- Instruction offered by Guldmann to all customer groups in connection with the purchase of a ceiling-mounted hoist has been received.
- The healthcare professional 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 Guldmann's stipulation.
- Only technicians who have been certified by Guldmann may install and test the rail systems.
- The hoist is used with the Guldmann lifting hanger or with another suitable hanger *(section 1.10)*.
- The hoist is used with a Guldmann lifting sling or with other suitable slings *(section 1.11)*.

1.05 **Important/Precautions**

- Read the instructions carefully before using the GH3 and in connection with cleaning and service of the hoist.
- The GH3's maximum load must never be exceeded.
- The GH3 may only be used to lift a person.
- The red strap for the emergency stop and the emergency lowering must be adjusted to the healthcare professionals reach, and must not be removed.
- The GH3 must not be used where there is a risk of it being splashed with water.
- If a defect appears during use of the GH3, stop using the hoist and contact the Guldmann Service Team for repairs.
- The GH3 is controlled by a microprocessor PCB, which can be damaged by static electricity if touched without the necessary precautions, (*see point 1.08)*
- The electronics may only be serviced by Guldmann approved service technicians.
- The lifting hanger must not be mounted or replaced when the GH3 hoist is positioned over the user.
- Do not modify this equipment without the authorization of the manufacturer
- The GH3 needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in Chapter 11 EMC Information.
- Portable and mobile RF communications equipment can affect the GH3.
- Accessories, transducers and cables must always be original Guldmann components. The use of other spare parts than those supplied by Guldmann may result in poor EMC protection. This may cause damage to the GH3 lifting module as well as electrical products in the nearby surroundings.
- The GH3 should not be used adjacent to or stacked with other equipment and if adjacent or stacked use is necessary, the GH3 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).
- Nothing should be connected to the USB port when the device is in use with a user.
- GH3 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

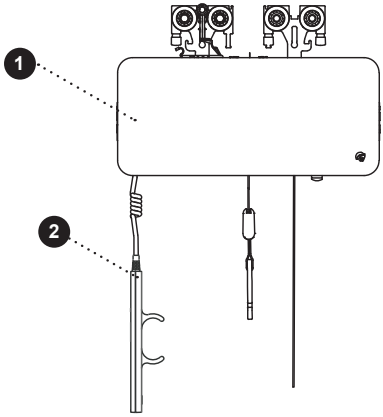
If electromagnetic or other influences occur between this product and other products, these products must not be used together.

1.06 **Load limits on GH3 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.

1.07 Unpacking and Preparation

Visual check of the GH3. If the GH3 is thought to be damaged upon reception, the GH3 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. GH3 hoist
2. Hand control
3. Manual
4. Label for rail system

1.08 Placing a new GH3 Hoist in an existing rail system

Please notice that when, placing a new GH3 hoist in an existing rail system it must be ensured that:

- The rated max load of the rail system, must be equal to 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 for a minimum of 20 min. The deflection of 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).

Class I equipment

Fixed rail systems are Class I equipment and ***must*** be installed by a qualified technician or by Guldmann Service Team.
Equipment is disconnected from Supply Mains by breaking the mains breaker switch.

Emergency stop device

The emergency stop device must be reset in order to connect power to the product. To do this, push the yellow reset button *(see point 2.09)*.

1.09 **Transformer / Power supply**

GH3 is equipped with batteries that require regular recharging. The transformer or power supply for charging and the battery charging point must be connected by a qualified engineer or by Guldmann Service Team.

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 PCB or components where it is possible to come into contact with the PCB.

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.

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.

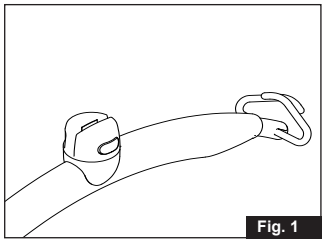


Fig. 1

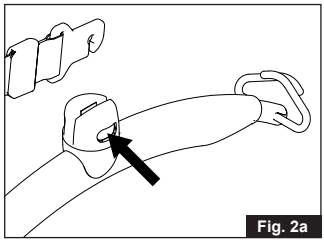


Fig. 2a

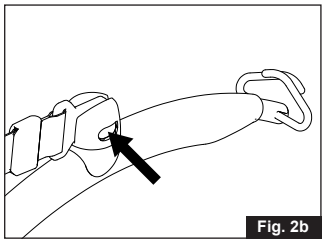


Fig. 2b

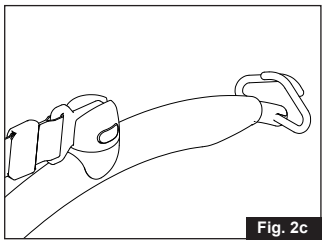


Fig. 2c

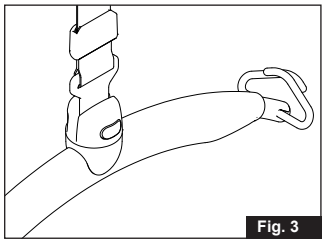


Fig. 3

1.11 Lifting sling

A lifting sling with four to eight lifting straps designed for mounting on hooks should be utilized when using a Guldmann lifting hanger. Place the straps on the hooks. If a hanger with rubber fingers is used, make sure that the rubber safety catch returns to its starting position, so that the strap 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 health-care professional 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 slings straps on the hooks. Check that the straps have been correctly placed in the lifting hangers 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 hangers hooks (Fig. 1).

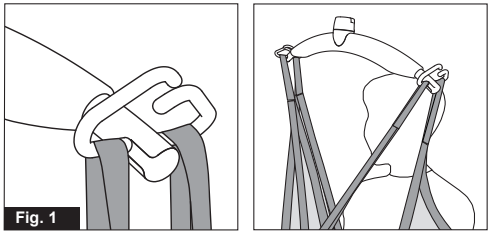


Fig. 1

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).

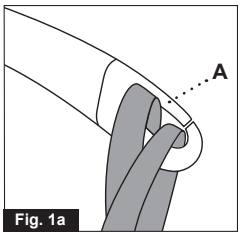


Fig. 1a

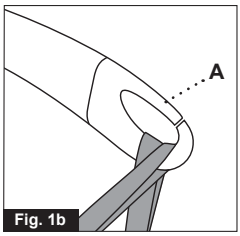
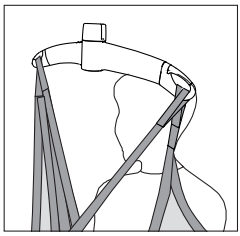


Fig. 1b



Lifting to and from a seated position
When lifting a user from e.g. a wheelchair, move the GH3 towards the user to be lifted.

The lifting hanger should be at the same height as the users chest and should be in approximately mid-thigh position.

Place the lifting hanger parallel to the users shoulders.

Place the lifting sling behind the users back between the back of the chair and the users back.

The center marks of the lifting sling should follow the users spine. Lead the leg straps along the outer sides of the users 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
Place the lifting hanger over the centre of the user to be lifted.
Place the lifting hanger parallel to the users shoulders.
Turn the user onto users side. The Basic High sling should be placed so that its top is at the same height as the top of the users head. Now position the sling over the user so that the centre band follows the users spine. Turn the user onto users back and pull out the remaining part of the lifting sling. Place the leg straps beneath the users thighs and cross them. All four lifting straps are now ready to be attached and the lifting sling can be mounted on the lifting hanger. It is an advantage to elevate the head of the bed so that the user is sitting up.

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

Working with the GH3
The GH3 runs easily in the rail system and does not have any special requirements for space or power in connection with moving. Attention can thus be fully focused on the users functional level and the healthcare professionals technique.

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 hoist lifts quickly and powerfully. Before lifting, check that the user is completely free of his/her surroundings. The users 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, user and other object before the hoist is activated up or down moved.

1.12 Swing kit

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.*


Fig. 1

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 to 4)*

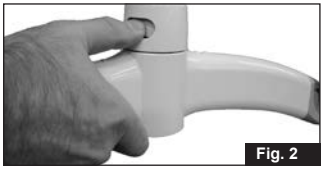


Fig. 2

2. Hold the lifting hanger in the right hand and press the yellow button using the thumb *(Fig. 2)*


Fig. 3a

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.

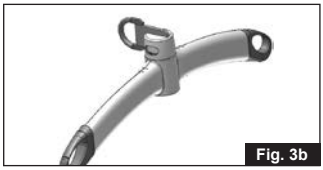


Fig. 3b

4. Rotate the swing adapter to a vertical position *(Fig. 4)*

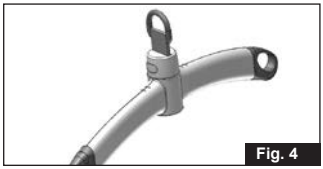


Fig. 4

5. 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.

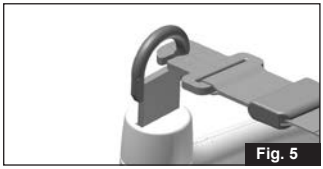


Fig. 5

6. 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)*

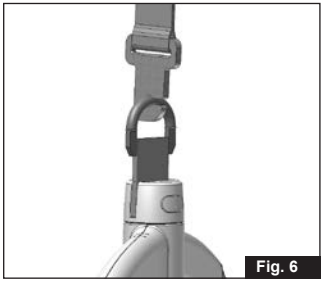
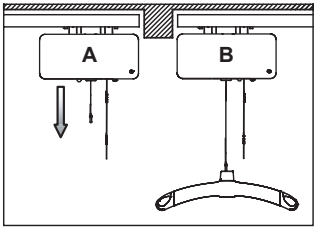


Fig. 6

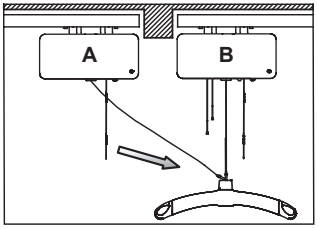
7. Rotate the strap attachment and ensure that it moves up on the circular portion of the swing adapter *(Fig. 6)*

1.13 Using swing kit in doorway

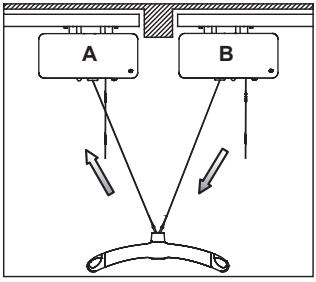
1. Bring the two hoists as close together as possible. Adjust the height of the lifting hanger on hoist B so that the transfer can be done without the user touching the floor during the transfer from one hoist to another.



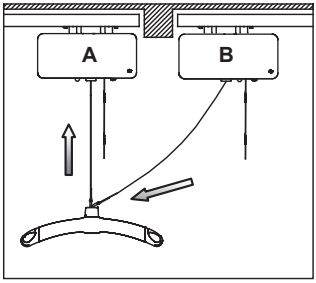
2. Take the free lifting strap from hoist A and secure it to the swing adapter on the lifting hanger *(see 1.12 figures 5 and 6)*. In order to lower the free lifting strap on hoist A a slight pull must be applied to the strap.



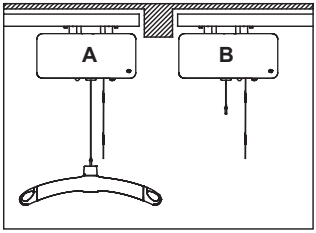
3. Lower the lifting hanger using hoist B while lifting the strap on hoist A to perform the swing transfer. The transfer has been completed when there is no load on the lifting strap on hoist B.



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.



1.14 GH3 with horizontal drive motor

The GH3 with horizontal drive motor can operate in the rail system.
Be aware that the drive motor takes time to both accelerate and brake the hoist. The drive speed can be reduced with the SIC software.

It is possible to position the hoist with horizontal driving motor with a high degree of accuracy by a brief activation of the hand control.

The GH3 with horizontal drive motor runs on its own power and it should not be pulled through the rail system.

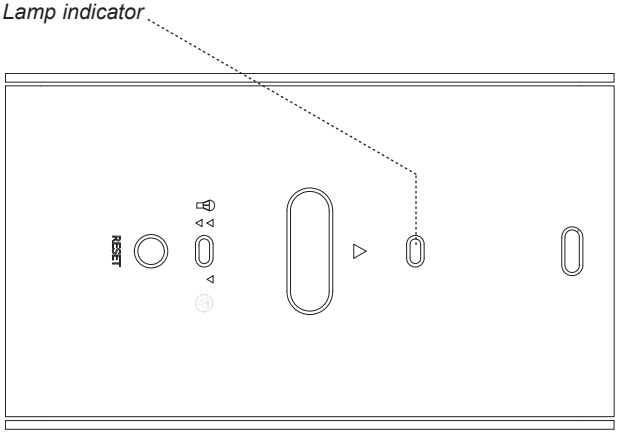
1.15 GH3 with horizontal drive motor and infrared remote (IR) control

The GH3 has an integrated IR receiver which is controlled by the IR remote control.

The hand control should be left attached to the hoist.
This means that the hoist can always be operated, in the the event that the IR remote control is misplaced or the battery is uncharged.

2.00 Description of functions

Information panel on the GH3 bottom surface.



2.01 Pictograms

Emergency stop

Emergency lowering function

RESET **Reset emergency stop**

Direction of travel denoted by grey arrow

Warning, crushing of hands

2.02 Indicator lamps and audio signals

Status	Indicator lamps	Audio signals	Possible GH3 Functions				
			Up	Down	Emergency lowering	Horizontal drive motor	Communication
Off – stand by	Off						
All OK	Green		x	x	x	x	x
No charging	Yellow, after 15 sec	3 x Beep after 60 sec	x	x	x	x	x
Low battery	Yellow		x	x	x	x	x
Fault on hoist	Yellow	Beeps at button activation			x		x
Battery critical low	Yellow	Beeps at button activation for functions that are not possible		x	x		x
Over load	Yellow	Beeps at button activation			x		x
Service date exceeded more than 60 days	Yellow	Beeps at button activation	x	x	x	x	x
Less than 60 sec of training available with Trainer module	Yellow	Continuous short beeps for 60 sec	x	x	x	x	x
Battery hyper critically low	Yellow	Beeps at button activation. Will shut down after 5 sec.					

2.03 Operation

Hand control

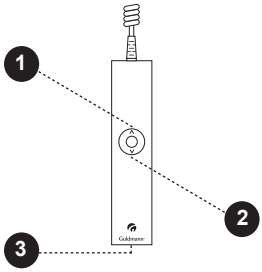
The GH3 is switched on automatically when a button on the hand control is pressed.

The GH3 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.

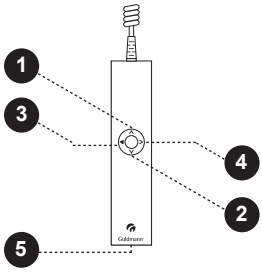
GH3 hand control

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



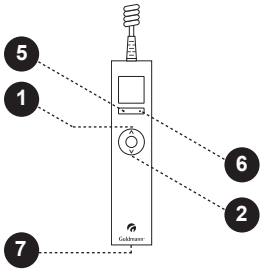
Hand control for GH3 with horizontal drive motor

1. Lift
2. Lower
3. Movement in the direction of the arrow on the GH3 information panel *(section 2.00)*.
4. Movement in the direction opposite to the arrow on the GH3 information panel *(section 2.00)*.
5. PDA interface (micro USB)



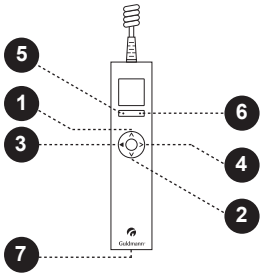
GH3+ hand control

1. Lift
2. Lower
5. Function selection button
   (section 2.04, supplementary modules)
6. Function selection button
   (section 2.04, supplementary modules)
7. PDA interface (micro USB)

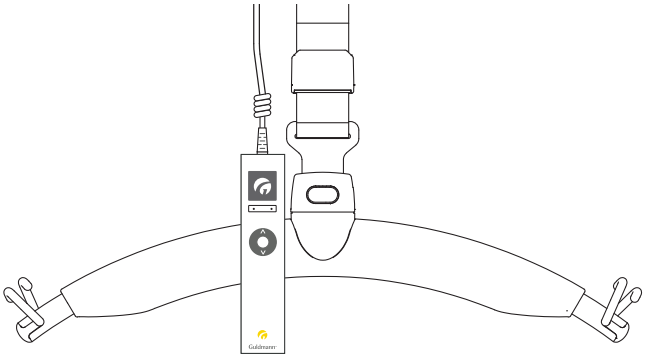


Hand control for
GH3+ with horizontal drive motor

1. Lift
2. Lower
3. Movement in the direction of the arrow on the GH3 information panel *(section 2.00)*.
4. Movement in the direction opposite to the arrow on the GH3 information panel *(section 2.00)*.
5. Function selection button
   (section 2.04, supplementary modules)
6. Function selection button
   (section 2.04, supplementary modules)
7. PDA interface (micro USB)

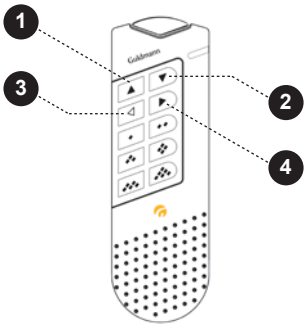


Parking the hand control
When the hand control is not in use it can be placed on the lifting hanger.



Infrared remote control

1. Lift
2. Lower
3. Movement in the direction of the arrow on the GH3 information panel *(section 2.00)*.
4. Movement in the direction opposite to the arrow on the GH3 (section 2.00).



Note:
In order for the GH3's lowering function to work, the strap must be carrying a load equal to the minimum capacity for Guldmann's lifting hanger.

Movement of the GH3 in the rail system
The GH3 is manually pushed forward in the rail by the healthcare professional.
The GH3 with 1 horizontal drive motor will run in the rail when the healthcare professional activates the hand control or IR remote control.
The GH3 with 2 horizontal drive motors will run in the rail by itself, when activated by the hand control or IR remote control.

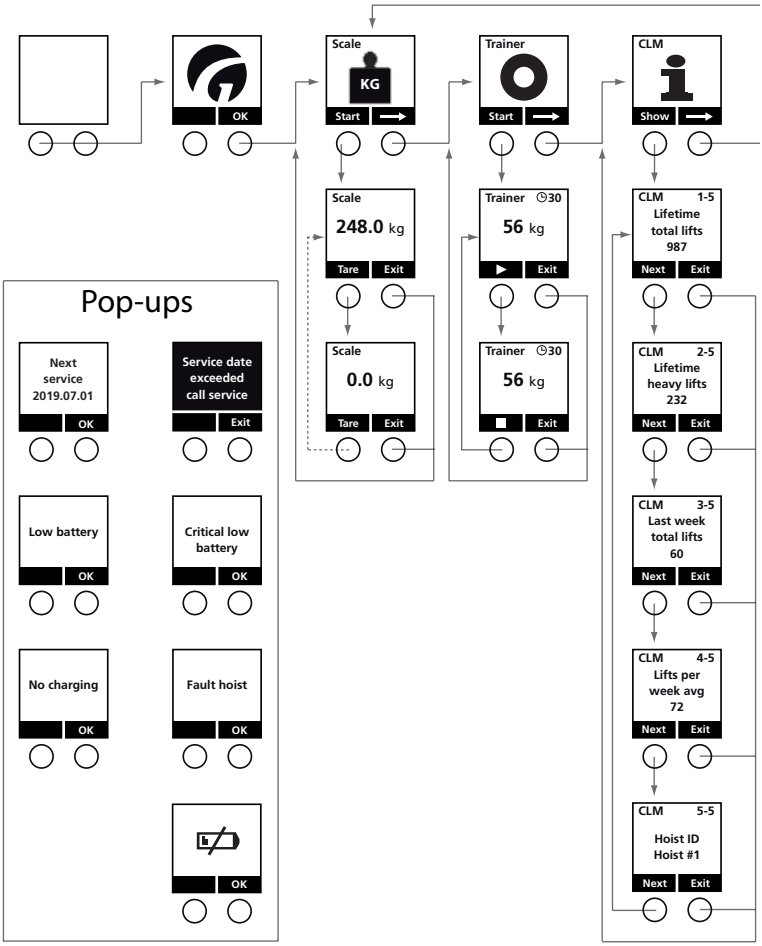
2.04 Supplementary modules, GH3+

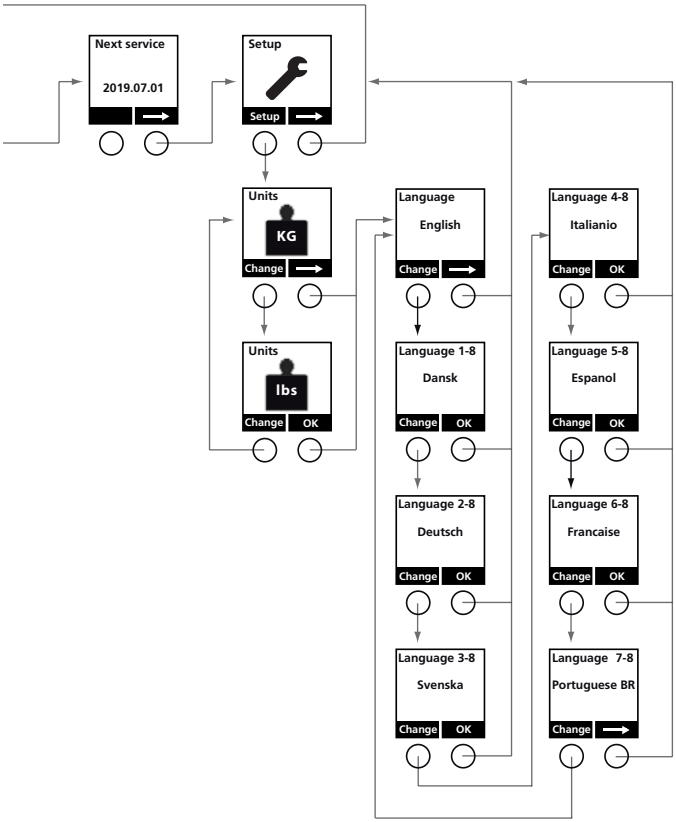
There are various supplementary modules for the GH3+

- CLM module (GH3+ with statistical function for management use)
- Service module (GH3+ with Service module)
- Scale module (GH3+ with integrated scale)
- Class III Scale (GH3+ with integrated Class III Scale)
- Trainer module (GH3+ with integrated dynamic weight relief)

Menu structure, GH3+ with supplementary modules

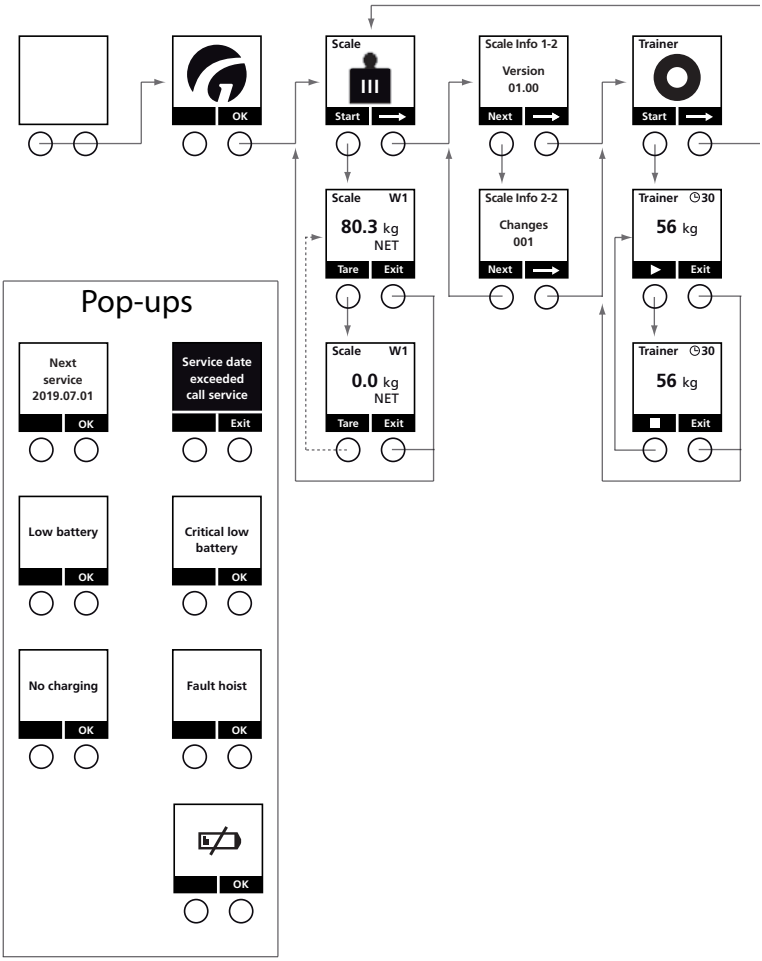
- Scale module
- Trainer module
- CLM module
- Service module

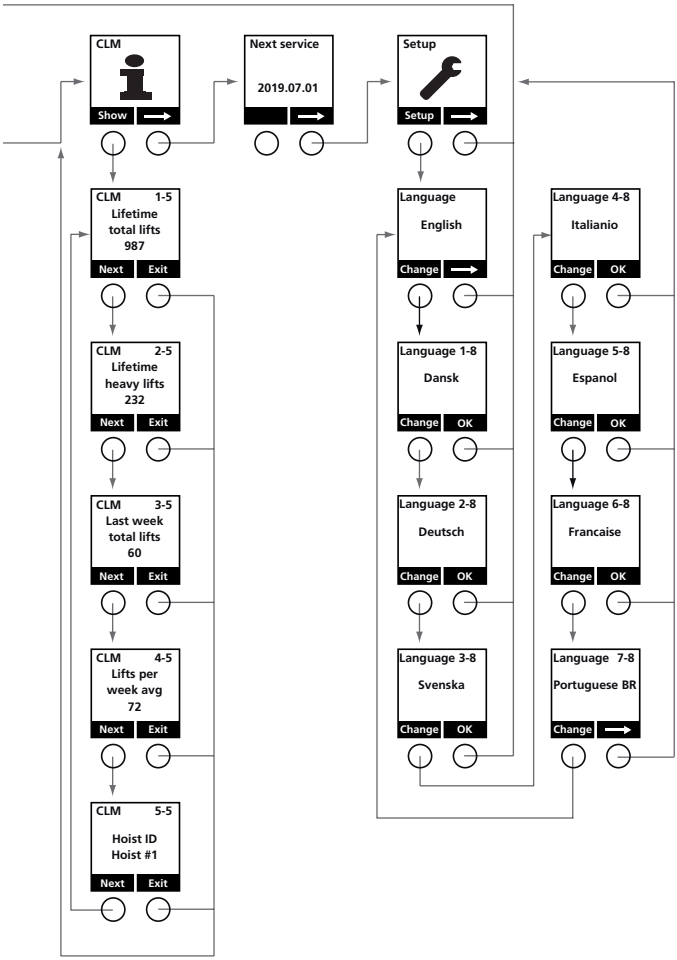




Menu structure, GH3+ with supplementary modules

- Class III Scale
- Trainer module
- CLM module
- Service module





2.05 Configuration of supplementary modules, GH3+

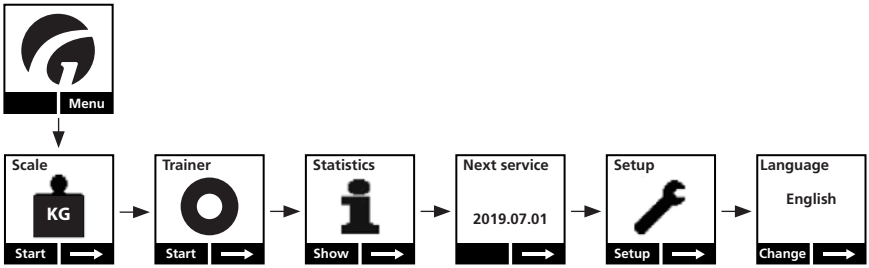
Before the GH3+ is put into use, the hoist must be configured. Configuration covers language (Scale module/CLM module/Service module/Trainer module) and the unit for specification of weight (Scale module).

Factory setting:	Language:	English (UK)
	Unit of weight:	kg

Scale module: The weight unit can be set to kg or lbs.
Class III Scale: The weight is always shown in kg.

Configuration of supplementary modules is done using the GH3+ hand control with display.

Setting the language



1. Press any key on the GH3 hand control to activate the hoist.
   When the hoist is activated, the display on the hand control is switched on and the Guldmann logo “G” appears.

2. Select “Menu” using the function key located immediately below the display and then select → until the “Setup” menu appears in the display.

3. Select “Setup” and then → until the “Language” menu appears in the display.

4. Select “Change” until the preferred language appears in the display, and confirm the selection by pressing “OK”.

5. Then return to “Setup”. Select → to return to the start menu.

2.06 Important before using the Scale module and Class III scale

Important/warning

- Read the user manual carefully before using any weighing instrument for the device.
- Only the Class III Scale shall be used for determination of mass in the practice of medicine for weighing patients for the purpose of monitoring, diagnosis and medical treatment due to its Class III accuracy in accordance with EU Directive 2014/31/EU.

Safety instructions

- Please comply with the maximum capacity of the scale which is stated on the identification label on the back of the device.

The maximum load must not be exceeded. The safety requirements and the notes on appropriate use must also be observed.

- Any modification exempts the supplier from liability for any damage as a result of modification.
- It is strictly forbidden to carry out any repairs and soldering work on the motherboards or to replace any components. Repairs must only be undertaken by Guldmann service team or by a Guldmann authorized technician.

The following applies to Class III scale:

- Sealing label (communication module) may not be broken
- The scale must be re-verified by a Notified Body, cf. local legislation for maintaining compliance. If necessary, a Guldmann-approved service technician can calibrate the scale in connection with a Notified Body's re-verification.
- When ordering a Class III scale, indicate the exact operating address (zip code, city, country). The specific G factor at the place of operation is coded into the scale's software, and the scale may only be used at this exact location.

Shock effects

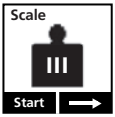
The GH3+ with scale module includes high-sensitive sensors to register mass corresponding to the nominal recommended load. The sensors are highly sensitive and can be damaged by the effects of shock, for example pulling the GH3+ at extreme speed into an end stop.

Operation

Always reset the GH3+ scale module before weighing takes place. When resetting the unit, the lifting hanger and the desired lifting sling must be attached under the hoist.

Never pull the hand control wire while weighing.

Menu icon showing that the Scale module is present.



Menu icon showing that the Class III scale module is present.
The structure of the menus are the same.

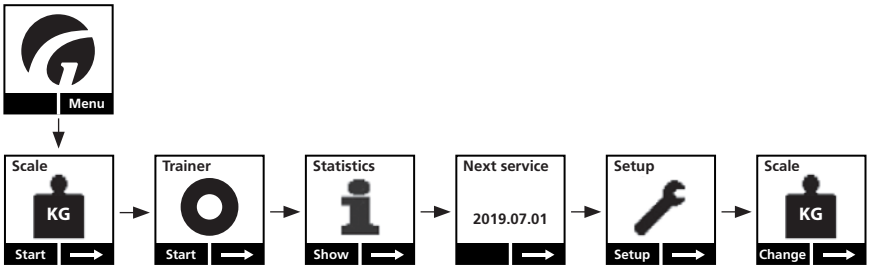
2.07 Scale module and Class III scale module

The GH3+ with scale module (option) can be used as an indicative measurement of the weight, not for the purpose of monitoring, diagnosis and medical treatment.

Warning!

A Class III Scale comply with the requirements for with calibrated, accurate and repeatable weight measurements with Class III accuracy in accordance with EU Directive 2014/31/EU.

Setting the units, kg/lbs (Scale module)



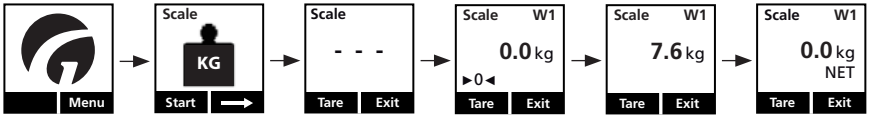
1. Press any key on the hand control to activate the hoist.
   When the lifting module is activated, the display on the hand control is switched on and the Guldmann logo “G” appears.
2. Select “Menu” using the function key located below the display
3. Then select → until the “Setup” menu appears in the display.
4. Select “Setup” and then → until the “Units” menu appears in the display.

5. Select “Change” to switch between the units kg and lbs, and confirm the selection by pressing “OK”.

6. Select → to return to the start menu.

7. The display in the hand control switches off automatically after use (approx. 8 min). *(See the complete menu summary, section 2.04, Supplementary modules, GH3+)*

Resetting (tare) of the Scale module and Class III Scale



1. Press any key on the hand control to activate the hoist. Guldmann logo “G” appears in the display. Select “Menu” using the function key located immediately below the display.

2. Then select → until the “Scale” menu appears in the display. Then select “Start”.

3. - - - flashes until the scale finds its zero point.

4. When the zero point has been detected, the display will read 0.0 automatically.

5. Mount the lifting hanger with sling onto the lifting strap. The weight of the hanger and strap will be displayed on the scale. Select ”tare” to reset. It is only possible to press tare when ”kg” is shown in the display. Do not pull the hand control while taring and weighing, as doing so will affect the result.

6. ”0.0” is shown once again in the display, and ”NET” appears under the ”kg” sign. The scale is now ready for weighing.

Weighing with a Scale module and Class III Scale

1. Always reset the Scale module / Class III Scale before weighing. See section ”Resetting of the scale”.

2. Lift the lifting sling off the hanger. Place the user in the lifting sling before mounting it on the lifting hanger.

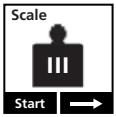
3. Lift the user. The correct weight can be read when ”kg” appears in the display. When ”kg” is permanently shown in the display, the scale is at rest and can be read. When ”kg” disappears, the scale is no longer at rest and the weight displayed may be incorrect.

   While being weighed, the user must be free of the surroundings in order to not affect the weighing. Do not pull the hand control while weighing, as doing so will affect the result.

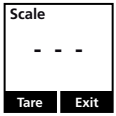
4. Select ”Exit” to return to the main menu.

Screen utilised when using the Scale module and Class III Scale

Start-up logo:
Press ”menu” to select the function



Menu icon for Scale module: **KG**
Menu icon for Class III scale: **III**
Press the left navigation button ”Start” to enter the menu.



Scale (in the scale menu): the scale starts up and resetting occurs automatically:
- Weight indication replaced by flashing lines
- Wait up to 10 sec before weight is shown

Weight (in scale menu): symbol for 0 is shown and means:
- The scale has been reset but has not yet been tared
- Weighing is being performed in weighing area 1 (W1)

Scale (in the scale menu): normal weighing.
- Here the weight is shown in weighing area 1 (W1)
- The sling is at rest and the weighing is therefore valid (as indicated by the ”kg” sign)

Weight (in scale menu): normal weighing
- The scale is in weighing area 1 (W1)
- The sling is not at rest, and the scale is therefore not ready for weighing (”kg” sign is not shown)

Weight (in scale menu):
- Net weight (NET) is shown as a result of the scale being tared
- Weighing range 1 (W1)
- The sling is at rest and the scale is ready for weighing (kg)

Weight (in scale menu):
- Net weight (”NET” is turned off): the weight has not been tared
- Weighing range 2 (W2)
- The sling is at rest and the scale is ready for weighing (kg)

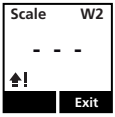
Version (information screen 1 of 2 in scale menu):
- The number before the decimal counts the software versions and larger modifications
- The number after the decimal counts minor software modifications and bug fixes.

Only available for Class III

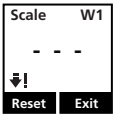
Changes (information screen 2 of 2 in scale menu): change counter
- Counts changes in software parameters such as calibration and values for G factor

Only available for Class III

Error notifications



The scale is overloaded.
Please follow the scale's prescribed load (see identification label on the hoist).



The scale is below the minimum possible reading value
(in other words, the load weighed is under 2 kg).
Select "Reset" and start over with setting the scale.

An error has occured in the scale. The display shows an error code.
Contact Guldmann to help solve the problem.

2.08 Class III Scale (GH3+ with Class III Scale)

The Class III Scale (option) is a built-in digital scale which complies with the requirements for determination of mass in the practice of medicine for weighing patients for the purpose of monitoring, diagnosis and medical treatment due to its accuracy class in accordance with EU Directive 2014/31/EU.

Resetting is performed electronically with the push of a button, which makes it fast and easy for the healtcare profesional to weigh the user.

Accuracy levels
The Class III Scale weighs with different levels of accuracy in two weighing ranges and depending on whether a single or twin hoist is used.

Product variants	GH3+ 200	GH3+ 250	GH3+ 275	GH3+ 300	GH3+ 350	GH3+ 375	GH3+ 400	GH3+ Twin 250	GH3+ Twin 375	GH3+ Twin 500
Max capacity kg	200	250	275	300	350	375	400	250	375	500
e_1 kg	0.1							0.2		
Min_1 kg	2							4		
Max_1 kg	200							200		
n_1	2000							1000		
e_2 kg	0.2							0.5		
Min_2 kg	4							10		
Max_2 kg	N/A	250	275	300	350	375	400	250	375	500

The specific weighing ranges and accuracy that apply to the individual hoist are indicated on the hand control immediately above the display:

	e = kg	Min kg	Max kg
W1	xxx	xxx	xxx
W2	xxx	xxx	xxx

Important!
If unloading from the scale during weighing, it will require resetting the unit to secure accurate measurements.

2.09 Calibration/verification of Class III Scale

In order to maintain compliance, the digital scale must be calibrated/verified according to national regulatory requirements at an accredited testing institute.

Software version and change counter are verified on the hand control's display.

In daily use it can be verified that the system is in compliance by a Notified Body by confirming that "Software version counter" reads 1 and the "Event counter" on the display corresponds with the counter values on the verification label.

Both values are 1 from the factory and until the first re-verifications.

1. Press any key on the hand control to activate the display.
2. Select "Menu" using the function key located immediately below the display.
3. Next, select → until the "Version" menu appears in the display.

   Version (information screen 1 of 2 in scale menu):
   - The number before the decimal counts the software versions and larger modifications;
   - The number after the decimal counts minor software modifications and bug fixes.

4. Select "next" to read "Changes".

   Changes (information screen 2 of 2 in scale menu): change counter
   - Counts changes in software parameters such as calibration and values for G factor.

5. Press EXIT to get back to the main menu.

2.10 Trainer Module

Who can use the Trainer Module?
The Trainer Module is used for early mobilisation and gait training of users who cannot maintain their balance or carry their entire weight alone, and where mobilisation is important for rehabilitation. The Trainer Module provides weight relief and support for the user, enabling training of walking function, balance, squat, sitting/standing exercises etc. despite poor balance and reduced strength.

How is the user given relief and support?
A special Gait Trainer sling has been developed for the Trainer Module. The sling lifts and supports the user during training. The Gait Trainer sling is mounted onto the hanger with straps like a standard sling. The sling is highly adjustable and provides good comfort during the actual training. Even when a high degree of weight relief is applied.

How do you use the Trainer Module?
The Trainer Module is built into a GH3+ ceiling hoist, which may be installed in a hospital ward. This provides the opportunity to carry out training/rehabilitation on the actual ward saving both time and resources, as the user does not need to be moved to an exercise room or physiotherapy.

How does the Trainer Module work?
The Trainer Module offers relief for the user by using a predefined number of kilograms, and so the user does not need to carry their entire body weight during the training session. The weight relief can be set anywhere between 0 and 100 kg. The healthcare professional selects the number of kilograms to be relieved considering the users physical condition and the exercises to be carried out. The hand control is then placed on the hoist's strap, allowing the healthcare professional to have both hands free to support and guide the user.

How long can you train for?
The Trainer Module can work with up to 100 kg weight relief for a duration of up to 30 minutes before the battery needs recharging. The hand control displays how much training time remains. One minute before the training time expires, the module will start beeping and display either or to indicate that the training session must be concluded.

If the training continues beyond the 30 allocated minutes, the Trainer Module will terminate automatically. The ceiling hoist can still be used to move the user. The Trainer Module cannot be used again until it has recharged to a minimum of one minute's training.

How long does it take to recharge?
10 minutes of training requires 1 hour of recharging: it takes 3 hours to recharge the ceiling hoist/Trainer Module to another full training session if you trained the entire 30 minutes.

Note: training time may fluctuate on new hoists for the first 3 to 5 full discharge/recharge cycles of the batteries. This also applies to hoists that have been unused for a longer period.

How do you perform a training session?

Preparation:

1. Start by planning the training session beforehand: which exercises should the user perform?
2. Prepare the training area: remove sharp and dangerous objects and ensure sufficient floor space to carry out the exercises.
3. Select the correct lifting hanger and mount it on the ceiling hoist's strap
4. Position the user in the Gait Trainer sling
5. Mount the straps of the sling to the lifting hanger

Training

1. When the user is ready to start training, activate the hoist by pressing any one button on the hand control, at which point the Guldmann logo will appear:

2. Click the " **Menu** " (Menu) button

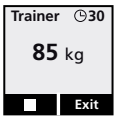
3. Press on → until the "Trainer" menu appears in the display

4. Select " **Start** " (Start) in the Trainer menu

5. The Trainer Module will now display a weight in kg.

Using the " ∧ ∨ " (up/down) buttons on the hand control, select the number of kg you wish to relieve. Note that the ceiling hoist will move slower than normally in order to facilitate a precise weight setting. The desired amount of weight relief is determined by the users individual needs and function level.

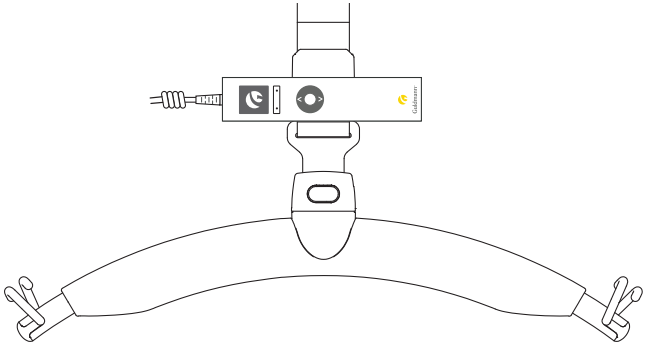
6. Once the weight relief has been selected, the training begins by pressing the left menu button ” ▶ ”



7. Automatic weight relief is activated and the training begins. This is indicated by a yellow display. The user may now carry out the exercises with their weight relieved as selected in step 5.

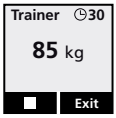
   The weight may be adjusted as needed during training using the up/down arrows on the hand control. Adjustments are done in intervals of 1 kg.

8. For hands-free control, the hand control may be clipped on an HC strap rest (accessorie).



   Hands-free control leaves the healthcare professional with both hands free to help the user during the training and prevents the cord from being wrapped around the strap, risking damage. Do ***not*** place the hand control on the hanger: the cord will wrap itself around the strap!

9. If you wish to terminate the automatic training function and return to normal “hold to run” mode, activate either one of the two menu buttons ” ■ **Exit** ” below the display (both buttons may be used).



10. When the training is over: select “ **Exit** ” (Exit) to leave the Trainer Module – the ceiling hoist will now function as normal (for lifting and transfer).

Error notifications

	Dynamic weight relief overload. Allowed dynamic weight relief max 100 kg. Please reduce load to activate dynamic mode.
	Dynamic weight relief underload. Allowed dynamic weight relief min 5 kg. Please load strap to activate dynamic mode.
	Upper or lower limit has been reached. Please make sure nothing is activating the upper limit and that the strap has been fully unwound.
	Battery level low. Indicating there is less than 60 seconds of training time available.
	Battery level critical. Training module will shut down.
	Time indicator. Indicating remaining training time in minutes.
	Training time is less than 1 minute or has been exceeded

2.11 CLM module (GH3+ with statistical function for management use)

The GH3+ with CLM module (option) includes a management tool that saves important information on the use of the lifting module and which can be used to evaluate the system's efficiency and utilisation, as well as to optimise its use and hoist name/location.

The following data can be shown on the hand control's display: number of lifts, number of heavy lifts, number of lifts in last week, average number of lifts per week.

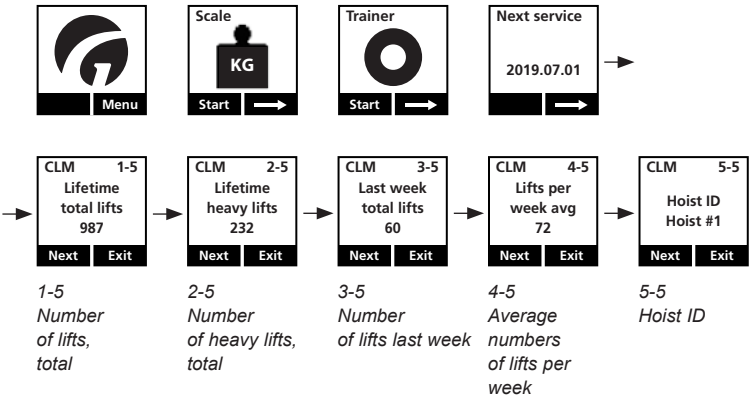
As an additional option, by connecting a PDA/Net Book to the hand control it is possible to gain access to a number of other saved data, e.g. the number of lifts since the last strap change, number of critically low battery readings, number of weighings, total lifting time, etc.
This information can be downloaded and used for further analysis.
(PDA/Net Book readouts requires a PDA/Net Book with Guldmann SIC/CLM software).

The USB in the hand control is only intended for connection of PDA/Net Book and may only be used by Guldmann service team or by a Guldmann authorized technician.

Number of lifts, total	A lift is registered automatically when the following events are registered simultaneously • Hand control is activated (Direction UP) for more than 2 seconds • The load on the lifting strap is registered being heavier than: 15 kg (33 lbs) Total includes the number of lifts performed after the lifting module was first taken into use.
Number of heavy lifts, total	A heavy lift is registered automatically when the following events are registered simultaneously • Hand control is activated (Direction UP) for more than 2 seconds • The load on the lifting strap is registered being heavier than: 150 kg (330 lbs) Total includes the number of heavy lifts performed after the lifting module was first taken into use.
Number of lifts, last week	The total number of lifts performed within the last seven calendar days
Average number of lifts per week	Average number of lifts per week (performed after the lifting module was first taken into use or reset by the Guldmann SIC/CLM software)

The data for "Number of lifts, last week" and "Average number of lifts per week" can, if necessary, be reset using a PDA/Net Book.

Operation



1. Press any key on the GH3+ hand control to activate the hoist.
   When the lifting module is activated, the display on the hand control is switched on and the Guldmann logo “G” appears.

2. Select “Menu” using the function key located below the display.

3. Then select → until the “CLM” menu appears in the display.

4. Then select “Show”.

5. Then select “Next” until the required information appears in the display.

6. Select “Exit” to return to the main menu.

Note:
The display on the hand control will automatically revert to the screensaver after approx. 8 min.

Accessories for the CLM module, GH3+
The CLM module includes an extended management menu which can be operated via a PDA/Net Book (with Guldmann SIC/CLM software installed). The PDA/Net Book is connected to the GH3+ hand control via a micro USB plug located in the base of the hand control (see section 2.03).
Contact supplier or the Guldmann Service Team for further information about CLM accessories.

2.12 Service module (GH3+ with service module)

The GH3+ with Service module (option) saves all of the information about time and indication of next safety/service inspection.

The GH3+ with Service module specifies the date of the next safety/service inspection.

Operation

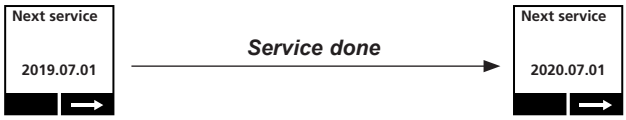
1. Press any key on the hand control to activate the hoist. When the lifting module is activated, a display on the hand control is switched on and the Guldmann logo “G” appears.
2. Select “Menu” using the function key located immediately below the display.
3. Then select → until the “Next service:” menu item appears in the display.
4. Read off the date of the next safety/service inspection (Year, Month, Date).

Pop-Up’s for Service module (supplementary module)

There are two different Pop-Up’s (brief messages on the display) on the GH3+ with Service module. These pop-up’s notify the user of upcoming and exceeded dates for service inspections.

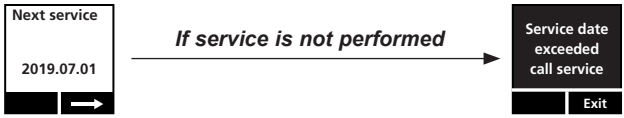
Both Pop-Up’s appear immediately after the hand control has been switched on.

Pop-Up’s before and after “Service Date”



1. Pop-Up, 60 days
   The next service inspection must be undertaken within 60 days.

   Select “OK” to return to the main menu
   (returns automatically after approx. 5 seconds).



2. Pop-Up, Service date exceeded
   The date of the service inspection has been exceeded, contact the Guldmann Service Team.

   Select “Exit” to return to the main menu (returns automatically after approx. 5 seconds).

   Attention!
   If the service date is exceeded by more than 60 days, the hoist makes an acoustic signal, at any button activation.

   The Acoustic signal can be disabled by the “Guldmann Service and Information Consol” software.

   Note:
   The display on the hand control will automatically revert to the screensaver after approx. 8 minutes.

2.13 Turbo speed

The GH3 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 (GH3+ with scale module = less than approx. 5 kg / 11 lbs. and GH3/GH3+ without scale module = less than approx. 30 kg /66 lbs.). When turbo speed is activated the hoist increases the speed of the lifting strap to 100 mm / 4” pr second. This allows the lifting hanger to be positioned in parking or returned quickly from parking unloaded.
When lifting there is a delay of 1 second (GH3+) or 5 seconds (GH3) 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.

2.14 Safety functions

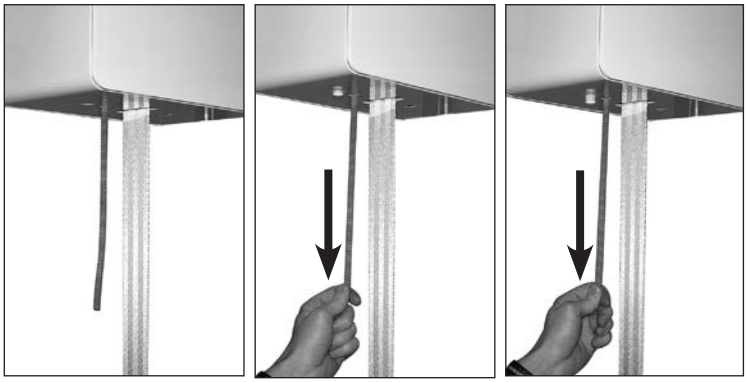
The emergency stop and emergency lower should only be used in the event of hoist failure or fault. The fault must be identified and rectified by a Guldmann certified service technician before the hoist can be taken back into use. The Emergency stop should not be reset unless by a suitably qualified technician.

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 emergency 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 GH3 does not stop/react to the hand control when the GH3 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 GH3 is ready for use.

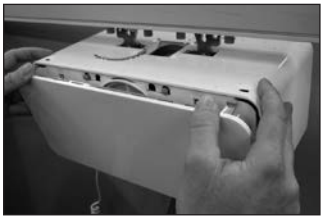
Emergency lowering function, electric

The emergency lowering function is identified as the essential performance. If the GH3 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.

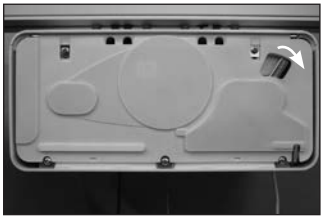
Emergency lowering function, mechanical

If the electrical emergency lowering function in the GH3 fails, the emergency lowering can be done mechanically.



1. Remove the side covers.
   Release the side covers from the top of the hoist by means of a gentle push on the fixing points on each side. The covers are tipped free of the hoist and can be removed.

2. Then release the hoist's motor by turning the handle bearing the words "EMERGENCY DOWN". This handle is located immediately behind the side cover and must be turned clockwise.



Note:

For hoists with SWL of more than 275 kg (605 lbs), there are two motors and therefore two handles to activate, one on each side.

3. When the brake(s) has/have been released, the user will be lowered slowly. If the total weight of the user and the lifting accessories is low (e.g. less than 50 kg (110 lbs), it may be necessary to help the user down by turning the large belt wheel located on the opposite side of the handle and in the direction of arrow marked on the belt wheel.

Note:
A GH3 with SWL of more than 275 kg (605 lbs) has two lifting motors, and therefore two belt wheels to activate, one on each side.
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 GH3, the hoist MUST be serviced by a qualified technician or by the Guldmann Service Team.

2.15 Charging/connection

The GH3 is automatically charged trough charging liners in the rails, or through the hand control in a docking station. This guarantees the hoists functionality and maintains the batteries to ensure a long lifetime.

The indicator lamp on the bottom of the hoist turns yellow if the charge status becomes low or if there is a complete interruption of the charging function. The GH3 then has a limited number of lifts available before it must be re-charged.

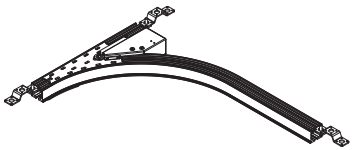
The transformer or power supply must be connected and switched on before charging can take place. A green indicator lamp on the transformer or power supply indicates that it is connected and switched on.

2.16 Accessories

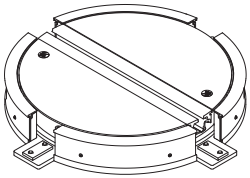
Guldmann – ABC slings and lifting hangers
Obtain a brochure from your distributor, manufacturer or at www.guldmann.com

Extension strap
The extension strap is used where the distance between the lower part of the rails and the floor exceeds 3.5 m (11' 7"). The extension strap is available as an accessory.

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



Turntable

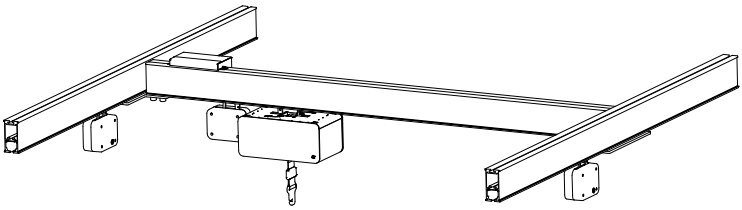


The turntable is used in rail systems where the hoist needs to run in several directions. The turntable must not be used with the GH3 Twin hoist.
The GH3 hoist is placed in the center of the turntable. By pressing the switch, the turntable rotates 90°. Press again, and the turntable returns to the first position.

Safety

This product is mechanically protected against derailing and jamming.

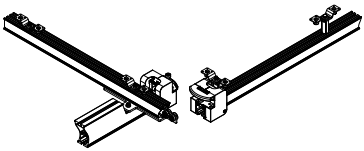
Positioning lock



The Positioning lock adds yet another option to the Guldmann GH3 ceiling hoist system for moving, treating, mobilising and rehabilitating people. Using the Positioning lock, it is possible to secure the lifting module and/or the traverse rail in a given position in the full-coverage rail system.

Securing the lifting module in this way allows it to be used for the rehabilitation and retraining of both bed-bound and more mobile users.

Combi-lock

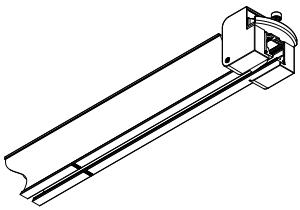


Intended use

The Combi-lock is used to move a user 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.

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 the user and healthcare professional.
- 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.

Infrared remote control
Turntable and Switch track can be supplied with receivers for IR remote control.

Batteries
Guldmann NiMH Battery 24 V/2.1 Ah

Transformer
Guldmann Transformer, Class I
Guldmann Transformer, Class II, 230V
Guldmann Transformer, Class II, 115V

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.

4.00 Maintenance and storage

4.01 Cleaning and disinfection

We recommend that the products and the parts users and healthcare professionals 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 with warm water and a disinfectant cleaner, e.g. an chlorine solution 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-therm storage, disconnect the battery plugs and the plug from the battery at the charging PCB.

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 anually.

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 the GH3 if the lifting strap is 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 GH3 including batteries**

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

5.00 Service and lifetime

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 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, load cells and lifting straps must be performed by a qualified service technician or the Guldmann Service Team. Class III scales must be verified by a Notified Body after servicing.
Any modification to Class III scales, to the metric system and the legal software shall free the supplier of any responsibility for damages that may occur as a result of errors in weighing users.
No part of the equipment shall be serviced when in use with a user.

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 a 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. Guldmann recommends that safety and service inspections must be performed every 6 months in these enviroments. 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.

NB!
The GH3+ with service module may only be serviced by the Guldmann Service Team or by a qualified service technician with access to the PDA/Net Book with Guldmann software.

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 part 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.

Re-verifying Class III scales
To maintain the medical approval of a Class III scale, the digital scale must be re-verified/calibrated in accordance with local regulatory requirements and by a Notified Body.

5.03 Troubleshooting

The GH3 does not respond to the hand control's keys

1. Check the emergency stop is not activated
2. Check the hoist has power supply
3. Check the transformer is switched on and connected to the rail system
4. Contact the Guldmann Service Team

6.00 Classification

CE marking

Medical equipment with respect to electrical shock, fire and mechanical hazards only.
In accordance with UL 60601-1, CAN/CSA c.22.2 No. 601.1

Medical Device Class I in accordance with EU MDR Regulation

Type B in accordance with UL/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

Class II

Class I equipment: Permanent installation with protective ground
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.

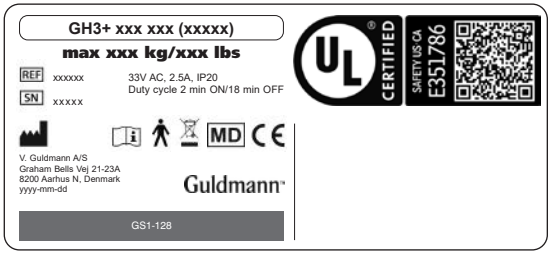
The equipment is not suitable for use in the presence of flammable mixtures.

Degree of protection against harmfull ingress of liquids (water)

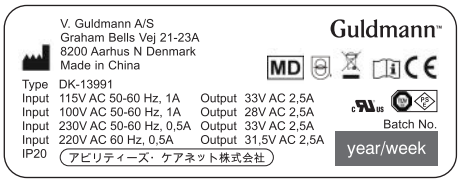
Hoist	IP20
Hand control	IP44
Remote control	IP20
Transformer Class I	IP20
Transformer Class II	IP21

Examples of serial number label

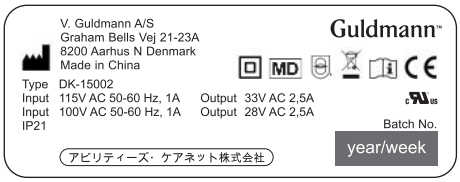
Lifting module



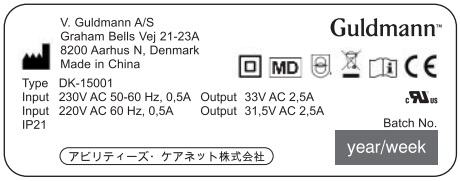
Transformer Class I



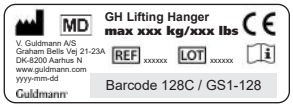
Transformer Class II
115 V version



Transformer Class II
230 V version

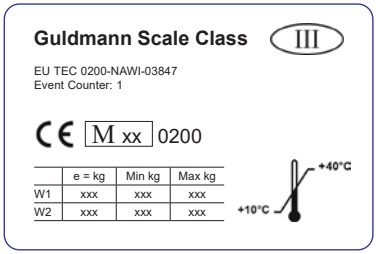


Lifting hanger



Hand control

Type approval label,
lifting module with Class III scale



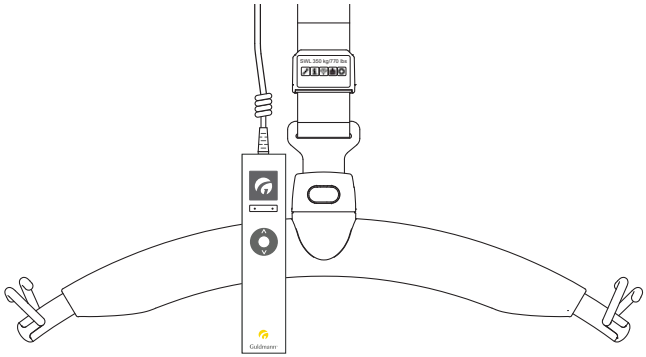
7.00 Certificates

IEC 60601-1	UL No. E351786
EN/ISO10535	136863-2 rev 1, 136863-3

8.00 Technical specifications

8.01 Module label, quick info

A module label on the strap relief indicates which optional modules are built into the specific GH3 lifting module together with a clear indication of the Safe Working Load.



Service Module *CLM Module* *Scale Module* *WiFi Module* *Class III Scale* *Trainer Module*

8.02 Configuration of GH3 lifting module

Basic configuration
The GH3 lifting modules are configured in a large number of variants. The 6 first columns in the chart below describes the basic configuration: ceiling hoist family, specific type, Safe working load, number of lifting straps, number of lifting motors, number of horizontal drive motors.

Options
The options of the hoist (IR remote, service module, scale module etc) can be chosen where applicable. All applicable options are indicated in the chart below.

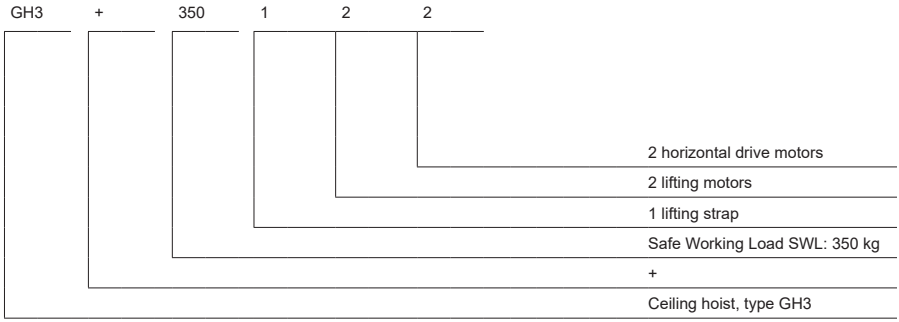
Configuration code
The final configuration of the options is indicated by a configuration code, for example 7C. The code is found on the serial number label, lifting module.

Use our Product Information App on smartphones to translate the code into configuration details. Download the app here: https://productinformation.guldmann.com. The app will also run on Chrome browser.

GH3 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 x)	IR remote xx)	Service module	CLM module	Scale module	WiFi module	Class III scale	Trainer module	Coating	UL	Charg. HC xx)
GH3	(x)	xxx	x	x	x	Configuration code (xxxxx)									
GH3		200	1	1	0 - 1 - 2	•							•	•	•
		250	1	1	0 - 1 - 2	•							•	•	•
		275	1	1	0 - 1 - 2	•							•	•	•
		300	1	2	0 - 2	•							•	•	•
		350	1	2	0 - 2	•							•	•	•
		375	1	2	0 - 2	•							•	•	•
		400	1	2	0	•							•	•	•
	+	200	1	1	0 - 1 - 2	•	•	•	•	•	•	•	•	•	
		250	1	1	0 - 1 - 2	•	•	•	•	•	•	•	•	•	
		275	1	1	0 - 1 - 2	•	•	•	•	•	•	•	•	•	
		300	1	2	0 - 2	•	•	•	•	•	•	•	•	•	
		350	1	2	0 - 2	•	•	•	•	•	•	•	•	•	
		375	1	2	0 - 2	•	•	•	•	•	•	•	•	•	
		400	1	2	0	•	•	•	•	•	•	•	•	•	
	Twin	250	2	2	0	•	•	•	•	•	•		•	•	
		375	2	2	0	•	•	•	•	•	•		•	•	
		500	2	2	0	•	•	•	•	•	•		•	•	

x) Drive motors are not compatible with UL
xx) Not compatible with UL

Example: GH3+ 350 122 (xxxxx)



8.03 Technical specifications

Functions

Lifting capacity, SWL . . . 200 kg (440 lbs), 250 kg (550 lbs), 275 kg (605 lbs)
300 kg (660 lbs), 350 kg (770 lbs), 375 kg (825 lbs), 400 kg (880 lbs)
Operation . . . . . .Hand control / IR
Sound level . . . . . .52 dB (A)
Horizontal speed . . . . . .18 m/min (709 inch/min)

Lifting speed	GH3	GH3+
85 kg (187 lbs) load	40 mm/sec ($1^{9}/_{16}$ inch/sec)	60 mm/sec ($2^{3}/_{8}$ inch/sec)
150 kg (330 lbs) load	40 mm/sec ($1^{9}/_{16}$ inch/sec)	60 mm/sec ($2^{3}/_{8}$ inch/sec)
Max capacity load, SWL	40 mm/sec ($1^{9}/_{16}$ inch/sec)	55 mm/sec ($2^{1}/_{8}$ inch/sec)
Max 5 kg (11 lbs) load GH3+ with scale		60 / 100 mm/sec ($2^{3}/_{8}$ / 4 inch/sec)
Max 30 kg (66 lbs) load	40 / 100 mm/sec ($1^{9}/_{16}$ / 4 inch/sec)	60 / 100 mm/sec ($2^{3}/_{8}$ / 4 inch/sec)

Weight and materials

SWL . . . . . 200 kg (440 lbs), 250 kg (550 lbs), 275 kg (605 lbs)
Own weight . . . . . 9.6 kg (21.1 lbs)
with horizontal drive motor. . . . . 10.5 kg (23.1 lbs)
with scale module and horizontal drive motor . . . . . 11.1 kg (24.5 lbs)

SWL . . . 300 kg (660 lbs), 350 kg (770 lbs), 375 kg (825 lbs), 400 kg (880 lbs)
Own weight . . . . . .14.2 kg (31 lbs)
with horizontal drive motor. . . . . .15.9 kg (35 lbs)
with scale module and horizontal drive motor . . . . . .17.3 kg (38 lbs)

Covers . . . . . Impact-resistant UL 94 V-0 flame retardant recyclable plastic

Scale module Specifications. Supplementary module for GH3+

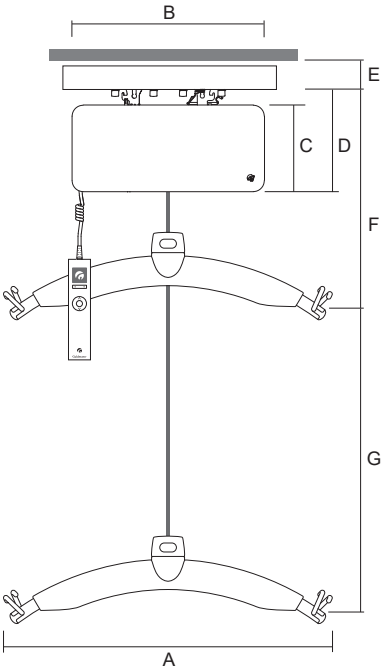
Accuracy . . . . . +/- 500 g
Display resolution (d). . . . . 0.1 kg (0.22 lbs)
Repeatability . . . . . < 0.1 kg at 0-200 kg (0-440 lbs)
< 0.2 kg at 0-400 kg (0-880 lbs)
Maximum capacity. . . . . SWL
Minimum capacity . . . . . 5 kg (11 lbs)
Display type . . . . . .LCD in Hand Control

Class III Scale Specifications. Supplementary module for GH3+

Accuracy class. III
Weighing range . . . . . Single-interval or multi-range (dual)
Maximum number of Verification Scale Intervals. 2000
Maximum capacity (Max). . . . . 200 kg to SWL
Verification Scale Interval(e1) . . . . . ≥ 0.1 kg
Minimum capacity (Min). . . . . .20 e
Maximum tare effect . . . . . .≤ -Max
Operational temperature, scale . . . . . .10°C - 35°C

Dimensions

A . . . . . 580 mm (22¾ inch)
B . . . . . 345 mm (13½ inch)
C . . . . . 156 mm (6⅛ inch)
D . . . . . 184 mm (7¼ inch)
E, min. . . . . 82 mm (3¼ inch)
F, min . . . . . 425 mm (16¾ inch)
G . . . . . 2500 mm (98 inch)
Depth of hoist . . . . . 205 mm (8 inch)



Safety

Emergency stop . . . . . Yes
Emergency lowering device. . . . . Yes, mechanical and 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 . . . . . 33V AC, 2.5 A
Supply voltage, transformer . . . . . 100-115/230V AC, 50-60 Hz

Battery . . . . . 24V NiMH
SWL: 200 kg (440 lbs), 250 kg (550 lbs), 275 kg (605 lbs) . . . . . 2.1 Ah
SWL: 300 kg (660 lbs), 350 kg (770 lbs), 375 kg (825 lbs), 400 kg (880 lbs)
. . . . . 2 x 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)
SWL: 200 kg (440 lbs), 250 kg (550 lbs), 275 kg (605 lbs). . . . . .
. . . . . 21/1000 mm (39¼ inch)
SWL: 300 kg (660 lbs), 350 kg (770 lbs), 375 kg (825 lbs), 400 kg (880 lbs)
. . . . . 40/1000 mm (39¼ inch)

Max charging time at 25ºC:
SWL: 200 kg (440 lbs), 250 kg (550 lbs), 275 kg (605 lbs). . . . . 2 hours
SWL: 300 kg (660 lbs), 350 kg (770 lbs), 375 kg (825 lbs), 400 kg (880 lbs)
. . . . . 4 hours

Operating temperature 10ºC-35ºC (50ºF-95ºF)

Degree of protection against harmful ingress of liquids (water)

Hoist . . . . . IP 20
Hand control . . . . . IP 44
Remote control . . . . . IP 20
Transformer Class I . . . . . IP 20
Transformer Class II . . . . . IP 21

9.00 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.

Class III Scale is complying with the directive 2014/31/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of non-automatic weighing instruments.

10.00 Type approval certificate

The Class III scale has the EU type examination certificate number 0200-NAWI-14151.

DANAK
PROD Reg. nr. 7026

FORCE Certification

EU Type Examination Certificate

No. 0200-NAWI-14151

GH3+

NON-AUTOMATIC WEIGHING INSTRUMENT

Issued by **FORCE Certification**
EU - Notified Body No. 0200

In accordance with the requirements in Directive 2014/31/EU of the European Parliament and Council.

Issued to **V. Guldmann A/S**
Graham Bells Vej 21-23A,
8200 Aarhus N
DENMARK

In respect of Non-automatic weighing instrument designated GH3+ with variants of modules of load receptors and load cells.
Accuracy class III, single-interval or multi range (dual)
Maximum capacity, Max: From 200 kg to 700 kg
Verification scale interval: $e_i = Max_i / n_i$
Maximum number of verification scale intervals: $n \leq 2000$.
Variants of models are set out in the annex.

The conformity with the essential requirements in annex 1 of the Directive is met by the application of EN 45501:2015 and of OIML R76:2006.

The principal characteristics and approval conditions are set out in the descriptive annex to this certificate.

The annex comprises 8 pages.

Issued on **2023-02-03**
Valid until **2033-02-03**

Jens Hovgård Jensen
2023-02-03
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FORCE Certification references:
Task no.: 121-27890 and ID no.: 0200-NAWI-14151-1

Signatory: J. Hovgård Jensen

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11.00 Environmental policy statement - V. Guldmann A/S

At Guldmann we will work actively to ensure that the negative impact that we can control is minimised.

Guldmann's Ambition is to ensure ongoing improvement of our environmental management system and its performance by:

- Working closely with our suppliers to ensure that we use materials and processes that are as sustainable as possible
- Continuously minimising the relative amount of waste and emissions and to ensure the highest possible degree of recycling
- Ensuring that our products do not have an unnecessary negative environmental impact in connection with use, recirculation and possibly destruction
- Complying with the applicable legislation
- Ensuring ongoing improvement of our environmental management system and associated environmental performance

All subsidiaries in the Guldmann group are covered by the above policy, and we expect that our Partners (suppliers and distributors) live up to this policy.

All Guldmann employees are obliged to immediately inform the management if they become aware of any violation of the environmental policy internally in the organisation or at our Partners.

This considers the economic and technological resources at our disposal and our general financial goals for the company and based on our fundamental values.

12.00 EMC Information

Tabel 1

Guidance and manufacturer's declaration – electromagnetic emissions

The GH3 is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH3 should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The GH3 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 GH3 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 GH3 is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH3 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 GH3 requires continued operation during power mains interruptions, it is recommended that the GH3 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 GH3 is intended for use in the electromagnetic environment specified below.
The customer or the user of the GH3 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 GH3, 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 GH3 is used exceeds the applicable RF compliance level above, the GH3 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the GH3.

[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 GH3

The GH3 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the GH3 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the GH3 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√P	80 MHz to 800 MHz d=1,2√P	800 MHz to 2,5 GHz d=2,3√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 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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