

Original operating manual for pewag levo link LL

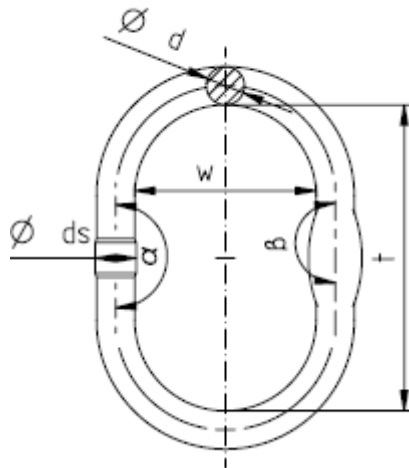
Please read the operating manual carefully prior to using this product. If you have any questions, please contact your supplier.
We are always grateful for comments



or suggestions as to how we could improve the content of our operating manuals. As a result of our ongoing research and development efforts, the pewag group reserves the right to perform technical changes and/or changes of external characteristics of our lifting devices. This operating manual must be made available to users until the lifting device is removed from service. This operating manual is subject to an ongoing improvement process and is therefore only valid in its most recent version. The most recent version of this operating manual is available at www.pewag.com.

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Code	Load capacity	d	t	w	s	Weight approx.
	[kg]	[mm]	[mm]	[mm]	[mm]	[kg]
LL 7	7.600	23	160	90	17	2

Code	Load capacity	d	t	w	s	Weight approx.
	[lbs]	[mm]	[mm]	[mm]	[mm]	[lbs]
LL 7	16.700	0,91	6,30	3,54	0,67	4,41

EN

1. General information

Please read this operating manual carefully prior to using the lifting device.

If you have any questions, please contact your supplier. Thank you for choosing one of our high-quality products. pewag austria GmbH is an ISO 9001-certified company and stands for the highest level of quality and safety based on many years' experience. The pewag levo link LL is part of the pewag levo WE product family. It is manufactured using premium components and complies with the following standards and product requirements:

Mechanical components	Electrical/electronic components		Charging station
ISO 9001	UL/CSA 61010-1	EN 61000-4-8	ETSI EN 303 417
EN 1677	ETSI EN 301489-1	IEC/EN 61010-1	ETSI EN 301 489-1
Maschinenrichtlinie 2006/42/EG	ETSI EN 301489-3		ETSI EN 301 489-3
EN 10204 3.1.B	EN 55011:2018	EN 61326-1:2013	EN 50364:2010
	EN 62479:2011	FCC, 47 CFR Part 15	CFR 47, Part 15
	EN 61000-4-2	EN 300220-2	RSS-216
	EN 61000-4-3	IC RSS-102	FCC KDB 680106 D01
			RSS-102
			IEC/EN 61010-1
			IEC/CSA 61010-1

The highlighted sections in this operating manual contain information on areas with a particularly high risk potential. Disregarding this information may cause serious injuries or death. Please pay particular attention to these sections.

2. Description of functions

The pewag levo link LL is a lifting device with weighing unit. The indicated weight on the masterlink can be seen in the pewag levo manager software. The masterlink is attached to a crane hook in a suitable size. The load to be lifted is attached to a chain sling, which is mounted on the pewag levo link LL.

The device is powered by a rechargeable, replaceable lithium-ion battery.

3. Safety instructions



Always bear in mind your own safety and that of others! Read this operating manual carefully before operating the pewag levo link LL. Please ensure that you have fully read and understood this operating manual before using the system.

A damaged lifting device or improper use may cause accidents that lead to severe injuries and/or death! Damaged lifting equipment (see maintenance instructions) may fail even during normal conditions of use. Such lifting equipment may not be used.

3.1 General information

- This product may only be operated by properly trained persons who must comply with all relevant standards and country-specific regulations.
Users of this product must be in a good physical condition. Users of this product must not be under the influence of drugs, alcohol or medication. The pewag levo link LL must not be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge unless they have been given supervision or instruction. Children must not play with the pewag levo link LL.
- Inspect the product for obvious defects prior to each use (deformations, cracks etc.) and ensure that it is functioning correctly. Ensure that the product has not been modified in any way. The system must not be used in case of missing or damaged components.
- Always use appropriate protective equipment (e.g. helmet, goggles, gloves etc.) and pay attention to the warning symbols.
- Do not use the system if it has not been tested or if a test date has been missed.
- Never use the system for a load that exceeds the maximum load specified on the identification plate. The lifting device must not be used for lifting and/or transporting persons.
- Loads must never be transported over the heads of persons. Always ensure that no persons remain in the lifting area and that safety distances are kept.
- Suspended loads must never be left unsupervised or unsecured.
- Do not use the lifting device as earthing for electrical works or welding works.
- Do not perform welding operations on the load while it is connected to the pewag levo link LL.
- The pewag levo link LL must not have contact with a welding electrode under any circumstances.
- Prior to the lifting operation, ensure that the used lifting devices, chains, connectors, loops, etc. have the correct size and may be attached to the pewag levo link LL smoothly.
- The pewag levo link LL may only be used with crane hooks of the correct size (DIN 15401, size 6). It must be possible to attach the crane hook smoothly to the link. If necessary, please use a transition link or similar.
- Prior to the lifting operation, always ensure that the load is fully balanced.

- To ensure the correctness of the indicated weight, lift the load in a vertical position above the centre of the load.
- The load must not collide with objects or buildings during the lifting operation.
- The inclination angle of the adjusted chain legs must not exceed 60°.
- If wire rope slings are used, note that for these the working load limit value defined for safety factor number 4 is valid.
- Lower the load in such a way that it comes to rest in a safe and stable position.
- To prevent damage to the device, never drop the pewag levo link LL.

3.2 Battery



IMPORTANT: Please follow all instructions carefully and take note of all warnings. Improper handling of lithium-ion batteries may cause fire, personal and/or material damage!

- **NEVER try to open or repair the system**
- Damaged systems (e.g. with cracks, broken parts, bent) must neither be charged nor used!
- If the system shows signs of expansion or swelling at any time, stop using it immediately. If this occurs during charging or discharging, stop the charging/discharging process and remove the system from the charging unit. Continued use, charging or discharging of a system that shows signs of expanding or swelling constitutes a fire risk!
- Always use the original levo charging unit to charge the system. If it is charged using an incompatible charger, there is a risk of fire leading to personal and/or material damage.
- Keep the system away from high temperatures and fire to prevent explosions.
- If the system is too hot to touch, it might be faulty. Leave the system to cool down in a cool place and remove all flammable material from its vicinity. The system can no longer be used. Please contact pewag and/or your supplier.

3.3 Charging unit

The following safety instructions refer to the charging unit.

- Use only the supplied pewag power unit.
- The connector plug must fit in the socket. The plug must not be modified in any way.
- Do not use the cable for purposes other than its designated use, for instance to carry the charging unit or to remove the plug from the socket. Keep the cable away from heat, oil and sharp edges.
- Do not use the charging unit in the open air. Always store at room temperature, protected from moisture and dirt.

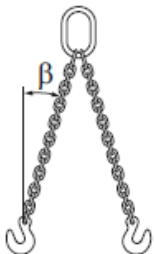
4. Designated use and technical data

pewag levo links LL are designed for the mounting of chain legs and weighing loads while used. They serve as the attachment of the lifting chain to hooks or to the lugs of a load.

4.1 pewag levo link LL

Load

The load must act in the longitudinal direction and on the plane of the link. The inclination angle of the adjusted chain legs must not exceed 60°.



Operating temperature

The long-term permitted operating temperature range for the pewag levo link LL is -20 °C to +60 °C.

Shock-loading

The pewag levo link LL must not be subject to shock-loading. Collisions of the suspended pewag levo link LL of any kind (when under load or when not under load) are not permitted.

Protection class

IP 68 (except for charging station.)

Safety factor against break

5:1

Design category

Acc. to ASME BTH-1 the pewag levo clamp LC is classified as Design Category B and service class 0.

4.2 Battery

Nominal voltage	3,7 V
Capacity	1,35 Ah
Energy content	4,77 Wh
Weight	0,04 kg
Cell type	Li-Ion, rechargeable
Temperature control	Yes
Deep discharge	
protection	Yes
Overcharge protection	Yes
Working temperature	-20 °C to +60 °C (-4 °F to +140 °C)

4.3 Charger

Operating voltage	100/240 V
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4.4 Labelling and identification

On the pewag levo link LL, there is an identification plate with the following information:

- Model
- Year of production
- Serial number
- Load capacity
- CE marking
- Manufacturer

The information on the identification plate must be legible at all times. If the safety stickers are not legible any more or missing completely, they have to be replaced.

4.5 Restrictions on use

Under certain conditions, the use of the pewag link LL is restricted (see table below). The table below describes certain loads with their corresponding reduction factors. Safe working load values can be calculated by multiplying the working load limit with the reduction factor defined in the table. If more restrictions of use are applicable during a lifting process, all corresponding reduction factors must be taken into account.

Reduction factors			
Impact loading	Slight impacts	Medium impacts	Strong impacts
	Created, for example, when accelerating during the lifting or lowering movement	Created, for example, when the chain is loaded but it slips while adjusting to the shape of the load	Created, for example, when the load falls onto an unloaded chain
Reduction factor	1	0,7	Not permissible

As a result of adverse environmental conditions and/or hazardous conditions, the following restrictions on the use of the pewag levo links LL and its accessories (charging unit) may apply:

pewag levo links LL are not suitable for use with food products, cosmetic or pharmaceutical products or with strongly corrosive substances (e.g. acids, sewage water ...). They are not suitable for use in explosion-protected areas. pewag levo links LL must not be exposed to the vapours of acids and chemicals or used in conditions other than those described in the section on „Designated use“ and its subsections.

Surface treatments that may damage the material (e.g. hot galvanising, electro-galvanising etc.), heat treatments, welding, drilling etc. are not permitted.

The pewag levo link LL is suitable for use in normal atmospheric conditions and for a temperature range from -20°C and +60°C. The product must not be used in conditions other than those specified here.

The load capacity specification is based on the assumption that no particularly hazardous conditions apply. Such conditions include offshore use, the lifting of persons and the lifting of potentially hazardous substances such as liquid metals, corrosive substances or nuclear material. In such cases, please contact pewag to determine the permissibility of the application and the degree of danger.



Never attempt to charge the battery using a device other than the original pewag charging station!
Never attempt to repair the charging unit yourself!

3 (incl. subsections) and the designated use listed under section 4 (incl. subsections).

- Use by improperly trained personnel
- Only 2 chain links are permitted to be attached directly to one masterlink.
- It is vital to pay attention to the right working load limit marking of the whole system (WLL on identification tag). The weakest part will determine the working load limit (e.g. when ordering the pewag levo link sling the WLL is 6,7T)
- Do not effect transverse or flexural loading.
- Use by personnel who is unable to fully comprehend the language of this operating manual
- Overloading

- Continued use despite visible damage or modifications of the device

4.7 Warnings and protective measures to be taken by the user



Always read the operating manual

Read the operating manual prior to using the pewag levo link LL or its accessories.



Always wear protective gloves when using the pewag levo link LL.

5. First use and operation

We recommend keeping the original packaging of the pewag levo link LL throughout its entire lifespan in case of returns!

5.1 Activate the pewag levo link LL

Prior to using the pewag levo link LL for the first time, you must bring the link into the active mode. Please follow the procedure as listed below.

Important:

- **Insert the pewag levo link LL into the charging unit correctly (see 5.2).**



- **Wait until the light on the charging station starts to flash green.**
- **The pewag levo link LL is ready for use.**
- **Remove the pewag levo link LL from charging unit** to remove the pewag levo link LL from the charging unit, take the charging unit off the pewag levo link LL (hold by magnets).

If the pewag levo link LL is not used, the link automatically goes into sleep mode. This saves the battery of the entire pewag levo link LL system. The system activates automatically based on movement. The system activates automatically based on movement.

5.2 Charging unit

The battery status of the pewag levo link LL is indicated with the pewag levo manager software. If only one bracket of the battery charging symbol is left, the battery needs to be recharged. Always use the pewag levo charging unit to charge the system. To charge the system, proceed as follows:

1. Connect the supplied power supply unit to the charger unit.

2. Insert the pewag levo link LL into the charging unit. Take care that the link is oriented correctly (symbol on charging unit and pewag levo link LL).



3. When the charging unit is charging the battery, the indicator light is flashing green. When it's fully loaded, a permanent green light is shown. If something is wrong, the indicator on the charging unit is flashing red.

5.3 peTAG

The peTAG is placed above the identification plate. The peTAG is an NFC chip designed to support you with the regular inspection and identification of the pewag levo link LL. For more detailed information, please visit www.pewag.com. This link tells you everything you need to know about the intelligent testing equipment offered by pewag.

5.4 pewag levo manager

The optional pewag levo manager software is a comprehensive configuration and analysis tool for the pewag levo link LL as well as for other pewag levo products. Among others, the pewag levo manager software offers the following options:

- Alarm feature (temperature and/or weight restriction)
- Monitoring of live data (weight, actual temperature)
- Configuration of various parameters
- Export of historical data of the pewag levo link LL

For a detailed list of the individual functions of the pewag levo manager, please contact your supplier and/or read the respective manual. The software must be installed on a PC or laptop using Windows 7 or a newer Windows version.

5.5 pewag levo manager USB Dongle

The levo manager USB Dongle is required for the communication between the pewag levo link LL and the pewag levo manager software. Wireless communication is set up by connecting the device to the USB port of a Windows computer. The communication does not necessarily require internet, it also works on a radio frequency basis. The maximum transmitting distance is 100m (unobstructed).



fig. 11: levo manager USB Dongle

5.6 pewag levo link LL data logger

A data logger is a processor-controlled storage unit that

records certain data via an interface and stores it in a storage medium.

The following data will be saved:

- ➔ Temperature/Weight during the operation
- ➔ Errors on the pewag levo device

Further information can be found in the pewag levo manager handbook.

6. Attaching and lifting the load

6.1 Attachment to the crane hook

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The pewag levo link LL may be attached directly to a crane hook (single hook acc. to DIN 15401, size 6). For larger crane hooks, a transition link or similar must be used. Always ensure that all parts have the required load capacity (crane hook, transition link etc.) The connection must be made in such a way that unintentional release is not possible (e.g. using a safety catch). The hook attached to the link must be able to move freely and must not touch the ground or the side link.

6.2 Lifting and lowering the load

Prior to lifting:

- Ensure that the maximum load capacity is not exceeded.
- Ensure that all attachments have been tested and are of the correct tonnage. Make sure that may be needed coupling links and shackles are of sufficient dimensions to allow the pewag levo link LL to move freely in the hook.
- Check if the pewag levo link LL shows any visible damage.
- Remove any grease, dirt and mill scale from the pewag levo link LL.

During the lifting operation:

- Lift gently to allow lifting force to be applied.
- Start the lifting operation slowly and avoid abrupt lifting.
- Lift the load in such a way that it is prevented from swinging.
- Avoid sudden stops and shock-loading.
- Ensure that the load or the pewag levo link LL does not collide with objects and/or building parts.
- Always ensure that the load is within your direct range of vision.
- Never transport a load over the heads of persons.
- Never leave the load unattended or unsecured in a suspended position

Lowering the load:

- Lower the load slowly and bring it into a stable and safe position.

9. Cleaning, maintenance, regular inspections

We recommend keeping the original packaging of the pewag levo link LL throughout its entire lifespan in case of returns!

9.1 Cleaning

In case of heavy soiling, the pewag levo link LL should be cleaned as follows:

- Clean the surface of the link with a cloth and, where required, a non- aggressive fat solvent.
- Plastic parts (charging unit): with a dry cloth

Do not use high-pressure cleaners, steam blasters or similar devices for cleaning.

9.2 Maintenance & repair

The pewag levo link LL must be checked for visible damage and/or dirt prior to each use. The following faults may be rectified by a competent person in accordance with this manual:

- Cleaning in case of heavy soiling
- Damaged, missing or illegible identification plate

With all other faults, the pewag levo link LL must be removed from service and handed for inspection and repair to pewag austria GmbH or an authorised pewag dealer.

Always use original pewag spare parts!

The pewag levo link LL may no longer be used if any of the following applies:

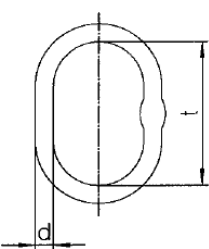
- Cracked or deformed ring/link
- Damaged battery
- Missing or illegible identification plate
- Heavy soiling or corrosion

Under no circumstances are users permitted to bend, weld or repair parts that are deformed, cracked or broken!

Discard criteria

- Cracked or deformed ring
- Deformed ring (see table)
- Grooves in the contact surface.

Measure	Maximal permitted change
d	-10%
t	+5%



9.3 Regular inspections and repairs

The product must be inspected, tested, checked and repaired as appropriate at least once a year (always consult the manufacturer's information and country-specific regulations for the regular inspection of lifting devices!) or if the product is damaged, by pewag austria GmbH or an authorised pewag dealer.

10. Warranty

pewag austria GmbH, Gaslaternenweg 4, 8041 Graz, Austria

users a 1-year warranty for their product. This warranty is valid worldwide. The warranty does not affect statutory warranty rights (liability for defects). This warranty is subject to the following warranty conditions (10.1) and assumes that all inspection and maintenance activities were performed in compliance with the manufacturer's instructions throughout the warranty period. The warranty includes all repair and dispatch costs in case of defects that manifest themselves during the warranty period and that are not due to wear and tear, normal usage, improper use or other exceptions that are listed in the following warranty conditions. In case of a warranty claim, please contact the warrantor specified above. Following the return of the product and the presentation of the sales receipt, the product will be repaired or replaced by a product of the same value free of charge. The warranty period is 1 year from the date of purchase. Battery cells, contacts and wear parts are not included in the warranty.

10.1 Terms and conditions

The warranty covers only such defects as result from normal use. If a defect is found within the warranty period, the pewag levo link LL will be replaced or repaired subject to the manufacturer's discretion.

pewag levo links LL with defects resulting from the following shall be excluded from the warranty:

- Normal wear and tear
- Overloading
- Improper or negligent use
- Damage
 - Non-compliance with the appropriate processes and procedures
 - Modifications of/changes to the pewag levo link LL
 - Incompetent use of the lifting device and non-compliance with the instructions outlined in the appropriate manual
 - Maintenance or repair works that have been performed by persons not authorised by pewag

The manufacturer shall not be liable for incidental damages or damages resulting from misuse of the pewag levo link LL or from violations of these warranty terms and conditions.

11. Storage

Store the pewag levo link LL in a clean condition. The product must not be exposed to corrosive, thermal or mechanical influences during storage. For long-term storage, we recommend charging the battery to 100 % of its capacity. If the system is not used for longer than two months, we recommend charging it its full capacity. Charge it again to 100% every two months.

For longer transports it is recommended to set the levo link LL into the transport mode using the pewag levo manager in order to conserve the battery (see pewag manager handbook).

12. Removal from service

The product has a high metal content and is fully recyclable. At the end of its lifespan, the product must be recycled in accordance with local regulations. Special batteries must be disposed of accordingly. Improper disposal (e.g. by burning) may lead to poisoning, burns, chemical burns and environmental pollution.

For all EU countries:

Do not dispose of electrical goods via domestic waste! In accordance with the European directive on waste electrical and electronic equipment, such equipment must be collected separately and recycled in an

environmentally friendly manner.

13. Declaration of conformity

-in accordance with Appendix II A of Machinery Directive 2006/42/EC 2010 for lifting accessories:

Representative for the compilation of technical documents in accordance with Appendix VII, part A:

DI Bernhard
Oswald
Mariazeller
Straße 143 A-
8605 Kapfenberg

We declare under our sole responsibility that the product for which this operating manual is valid complies with the regulations of Directive 2006/42/EC.

The following standards have been applied:

Hier die gleiche Tabelle wie auf Seite 2 einfügen!

ISO 9001	ISO 12100	FCC, 47 CFR Part 15
EN 13155	ISO 13849-1	EN 300220-2
EN 10204 3.1.B	ISO 13849-2	IC RSS-247
Machinery Directive	EN 55011/22	IEC 60335
2006/42/EG	EN 61000-4-2	EN 55014-1
	EN 61000-4-3	EN 55014-2
	EN 61000-4-8	EN 6100-3-2
	EN 61000-6-4	EN 6100-3-3
	EN 61000-6-2	

Amendment to FCC:

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment. This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Amendment to IC:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following tow conditions:

- (1) This device may not interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with innovation, science and economic development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- 1. This device may not cause interference.
- 2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- 1. L'appareil ne doit pas produire de brouillage.
- 2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

In accordance with Appendix VI of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment:

We declare under our sole responsibility that the product for which this operating manual is valid complies with the regulations of Directive 2011/65/EU of the European Parliament and the Council from 8 June 2011 of the use of certain hazardous substances in electrical and electronical equipment.

Any modification carried out on the product that were not authorised in advance by pewag shall result in these declarations losing their validity. Prior to using this product for the first time, the operations manual must have been read and understand in full.

Graz, 01/11/2019
pewag Austria GmbH

ppa. Stefan Duller