



EN

Original operating manual for
pewag winner G10 standard lifting components

Translation of original operating manual for pewag winner lifting components G10

General description

The lifting components described in this original operating manual are intended for the assembly of pewag winner lifting chains in grade 10 and are suitable for the lifting and transporting of loads, provided that the instructions of this operating manual and all national regulations are complied with.

They comply with Machinery Directive 2006/42/EC and may only be used in accordance with the Declaration of Incorporation and once the operating manual has been fully read and understood.

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, which is available for download at www.pewag.com.

Designated use

Purpose: Assembly of lifting chains; attachment, lifting and transporting of loads.

For detailed information on the designated use, please consult the tables and information relating to the individual components on the following pages.

Load: Chains must be aligned twist-free and straight (i.e. free from knots), without bending impacts (for reduction factors, see table "severe conditions"). Accessories that function as connecting elements, for instance lifting eyes and hooks, must also be able to move freely and align themselves in the load direction.

Normal operating temperature:

-40 °C to 200 °C

For possible deviations from normal operating temperatures, please consult the information texts for the individual components.




Shocks: Components must not be subjected to shock-loading! In case of impacts, restrictions on use apply.

Users: The components may only be used by properly trained personnel.

Prior to each use, components must be inspected by the user for visible defects.

Restrictions on use

In certain conditions, restrictions apply for the use of pewag winner G10 lifting components (see table "severe conditions" on the following page). The table shows loads and their respective reduction factors. The admissible load capacity results from multiplying the maximum load capacity with the reduction factor as outlined in the table. If several restrictions on use apply for a single lifting process, all applicable reduction factors must be used! pewag winner lifting components G10 are not suitable for use with food products, cosmetic or pharmaceutical products or with strongly corrosive substances (e.g. acids, chemicals, sewage water...). They must not be exposed to the vapours of acids and chemicals. pewag winner G10 lifting components are not suitable for the transport of persons or for use in explosion-protected areas.

Temperature	-40 °C – 200 °C	above 200 °C – 300 °C	above 300 °C – 380 °C
Load factor pewag winner 400	1	0.9	0.75
Load factor pewag winner 200	1	not permissible	not permissible
Asymmetric load distribution	Reduce load capacity by at least 1 chain leg, e.g.: III- or IV-leg chain sling must be classified as a II-leg chain sling. If in doubt, work on the assumption that the entire load is carried by a single leg.		
Edge load*	R = larger than 2 x d* 	R = larger than d* 	R = smaller than d* 
Load factor	1	0.7	0.5
Shock	slight shocks	medium shocks	strong shocks
Load factor	1	0.7	not permissible

*d = diameter of chain

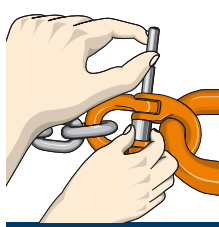
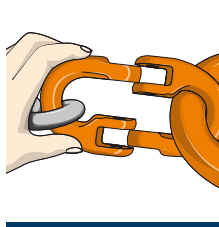
The information contained in this operating manual is based on the assumption that no particularly hazardous conditions apply. Such conditions include offshore use, the lifting of persons and the lifting of potentially hazardous substances such as liquid metals, corrosive substances or nuclear material.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

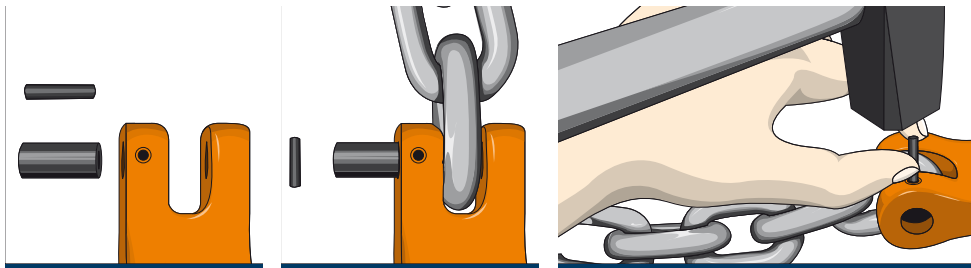
Improper use

pewag winner G10 lifting components may not be used in conditions other than those described in the sections on Designated use and Restriction on use – e.g. avoiding transverse or bending loads. Safety catches must not be placed under load during lifting operations. Do not place hooks into eyes that are too small as this would cause tip-loading. Hooks must not be placed in overly large crane hooks or similar. Surface treatments that may damage the material (e.g. hot galvanising, electro-galvanising etc.), heat treatments, welding, drilling etc. are not permitted.

Assembly instructions

The components may only be assembled by competent persons who have the necessary skills and knowledge. pewag winner G10 lifting components are assembled into lifting chains with other pewag winner G10 lifting components, esp. pewag winner 400 chains or pewag winner 200 chains, using connecting links (Connex, BW transition links) or coupling links (always comply with country-specific regulations!) To determine which product is suitable for the respective chain dimension, please refer to the Code for each product on the following pages, or consider the pewag winner G10 lifting catalogue resp. the pewag homepage. pewag winner 400 chains and pewag winner G10 lifting components may also be used for the repair of Nicroman (G8) chain slings, as long as a misinterpretation of the sling WLL by the user is excluded for instance by means of standardised colours and correct labelling. However, they must not be used for adjusting or repairing pewag winner inox G6 plus and stainless chain slings in grade 5. The complete system into which the components are to be incorporated must comply with the requirements of Directive 2006/42/EC. Always ensure that the load capacity is shown throughout the system (load capacity tag). The load capacity is determined by the weakest link. Only fault-free parts may be assembled. Damaged chains or components may not be used. Used parts must be checked in line with the information provided in section "Maintenance, Inspection, Repair".





Protective measures to be taken by the user

EN

Always wear safety gloves. If conditions apply that entail restrictions on use, always use the load capacity reduction factors as indicated in this manual to ensure maximum safety.

Remaining risks

Overloading caused by failure to comply with the maximum load capacity or failure to reduce load capacity due to temperature, asymmetry, edge or shock-loading may cause components to fail, as may incorrect assembly, improper use with chemicals, food products, cosmetic or pharmaceutical products, exceeding the maximum angle of inclination, strong vibrations in combination with high loads, transverse loading or the use of non-inspected components. Such failure may cause loads to fall, constituting a direct or indirect danger to the physical condition or health of persons who are present within the hazard area of lifting devices.

Procedure in case of accidents or faults

In case of blocked safety catches or if individual components become stuck on the load, do not use excessive force to avoid damage. Lower the load and resolve the fault using manual force. If individual components show signs of deformation (e.g. due to overloading) or in case of other unusual events, the lifting chain must be re-moved from service and handed to a competent person for inspection or repair.

Maintenance, inspections and repairs

Maintenance: Components must be cleaned regularly. After use in a wet environment, components must be dried and protected against corrosion, e.g. lightly oiled.

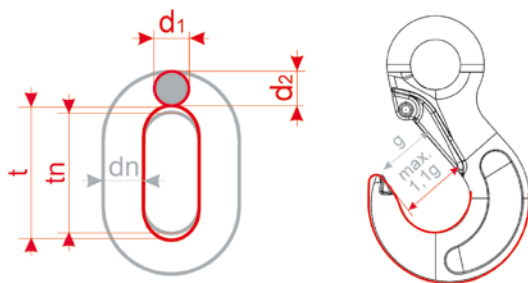
Inspections: Components must always be inspected in a clean condition, free from oil, dirt and rust. Paint is only admissible if it does not obstruct the correct evaluation of the component state. Cleaning procedures that cause embrittlement of the material, overheating (e.g. flame-cleaning), abrasion (e.g. blasting) etc. are not permitted. Cracks or other defects must not be covered up during cleaning. Prior to each use, components must be inspected by the user for visible defects. They must be inspected by a competent person at least once a year. Please note that this interval may be shortened due to prevalent conditions of use, for instance frequent use at maximum load capacity or when restrictions on use apply. A crack test must be performed every 2 years. This may be done in several ways: loading with 2-fold load capacity, followed by visual inspection, dye penetrant inspection, magnetic surface crack testing (magnetic particle testing).

Discard criteria: If one or several of the following criteria apply, chains and components must be removed from service immediately:

- Breaking.
- Illegible markings.
- Deformed components or chain.
- Elongated chain: The chain must be discarded if the inside pitch is $t > 1.05 t_n$, with t_n being the nominal pitch of the chain link.

- A wear ratio of up to 90 % of the nominal thickness d_n is admissible for the mean diameter d_m . This mean diameter is calculated from the mean value of the measurements of diameters d_1 and d_2 carried out at a right angle on the cross-section to be measured (see image). The chain must be removed from service life if:

$$d_m = \frac{d_1 + d_2}{2} \leq 0,9 d_n$$



- Cuts, notches, grooves, surface cracks: These defects may cause sudden breakage, in particular if running across the direction of pull!
- In case of wear or chemical removal of material (e.g. pitting corrosion), discolouration due to excessive heat exposure, signs of subsequent welding.
- Missing or malfunctioning safety mechanism and signs of widening of the hooks. The jaw opening must not exceed 10 % of the nominal value! An open safety catch also indicates that the hook is overloaded.
- In case of doubt regarding the functioning and/or safety of components.

Maximum admissible dimensional change based on the nominal dimension:

Designation	Dimensions	Admissible deviation
Chain	d_m	-10 %
	t	+5 %
Links	d	-10 %
	t	+10 %
Hooks *	e	+5 %
	d_2 and h	-10 %
	g	+10 %
	a	-10 %
CW, CARW, CLW	halves loose	no changing admissible
	e	+5 %
	c	-10 %

Designation	Dimensions	Admissible deviation
BWW, GHW	e	+5 %
	d	-15 %
	d ₁	+5 %
	angle change	≤3°
SCHW, GSCHW, U	bolt loose	no changing admissible
	e	+5 %
	d, d ₁ , d ₂ and M	-10 %
SM	e	+5 %
	g	+10 %
	d	-10 %
BA	d ₂	-10 %
FA	d ₁	-5 %
Clevis bolts Connex bolts	d	-10 %
LHW, KLHW,	d ₂	-10 %
WLH(B)W	h	-10 %
	opening of hook	2x s max.

* HSW, FW, PW, KHSW, GKHSW, BKHSW, PSW, KPSW, LHW, WLHW, WLHBW, KLHW, KSCHW, KCHW, KFW, KPW, KVS, XKW, KOW, KRW, WSBW

Repairs: Repairs may only be performed by competent persons who have the necessary skills and knowledge. Small cuts, notches and grooves may be removed by careful grinding or filing. After the repair, the treated area must merge smoothly with the surrounding material, without abrupt changes of the cross-section. Repair works must not reduce the dimension of the area by more than 10 % – discard criteria must not apply after the repair. Welding, heat treatments, straightening of bent components, is not permissible. Always keep records of inspections and repair works and ensure that these are stored throughout the service life of the components.

Storage

pewag winner G10 lifting components must be stored clean, dry and protected against corrosion, e.g. lightly oiled. Components must not be exposed to chemical, thermal or mechanical influences during storage.

Specific information on the individual product groups

Lifting chain pewag winner 400 und winner 200

Purpose: Building of chain legs in lifting chains, lifting and transporting of loads.

Load: Must be loaded in a longitudinal direction with a max. load capacity as specified in the table. Links must be free to align themselves in the load direction. Chains must not be subjected to shock-loading.

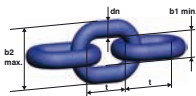
Edge loading: Is to be avoided. If edge loading occurs, load capacity must be reduced accordingly. See table on Severe Conditions in the chapter on Restrictions of Use.

Operating temperature:

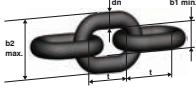
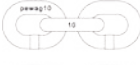

winner 400 lifting chain: -40 °C to 200 °C

winner 200 lifting chain: -40 °C to 200 °C

Load capacities:

winner 400 Lifting chains	Code	Nominal diameter dn [mm]	Standard delivery length [m]	Pitch t [mm]	Inside width b1 min. [mm]	Outside width b2 max. [mm]	Load capacity [kg]	Breaking force [kN]	Weight [kg/m]
 <p>Identification:</p>  	WIN 5 400	5	50	16	7,50	18,50	1,000	39.30	0.61
	WIN 6 400	6	50	18	8,70	22,20	1,400	56.50	0.96
	WIN 7 400	7	50	21	9,50	25,20	1,900	77	1.20
	WIN 8 400	8	50	24	10,90	28,80	2,500	101	1.57
	WIN 10 400	10	50	30	13,50	36	4,000	157	2.46
	WIN 13 400	13	50	39	17,50	46,80	6,700	265	4.18
	WIN 16 400	16	25	48	21,50	57,60	10,000	402	6.28
	WIN 19 400	19	25	57	26,60	69,40	14,000	567	8.92
	WIN 22 400	22	25	66	29,50	79,20	19,000	760	11.88
	WIN 26 400	26	15 / 25	78	35	94	26,500	1,060	16.18
	WIN 32 400	32	15	96	43,20	115	40,000	1,610	24.10

The chain is painted blue, optionally also available with the tried-and-tested coropro coating PCP for maximum corrosion resistance.

winner 200 Round steel chains	Code	Nominal diameter dn [mm]	Standard delivery length [m]	Pitch t [mm]	Inside width b1 min. [mm]	Outside width b2 max. [mm]	Load capacity [kg]	Breaking force [kN]	Weight [kg/m]
 <p>Identification:</p>  	WIN 5 200	5	50 / 100	16	7,50	18,50	1,000	39.30	0.61
	WIN 6 200	6	50 / 200	18	8,70	21,60	1,400	56.50	0.96
	WIN 7 200	7	50 / 250 / 300	21	9,50	25,20	1,900	77	1.20
	WIN 8 200	8	50 / 50 / 200 / 250	24	10,90	28,80	2,500	101	1.57
	WIN 10 200	10	50 / 130 / 150	30	13,50	37	4,000	157	2.46
	WIN 13 200	13	50 / 75 / 100	39	17,50	46,80	6,700	265	4.18
	WIN 16 200	16	25 / 50 / 100	48	21,50	57,60	10,000	402	6.28
	WIN 19 200	19	25 / 35 / 50	57	26,60	69,40	14,000	567	8.92
	WIN 22 200	22	25 / 30	66	29,50	79,20	19,000	760	11.88
	WIN 26 200	26	25	78	35	94	26,500	1,060	16.18
	WIN 32 200	32	20	96	43,20	115	40,000	1,610	24.10

The chain is lack varnished, optionally also available with the tried-and-tested coropro coating PCP for maximum corrosion resistance.

Must not be used as a lifting chain in Austria as it does not comply with the Austrian Standard for Lifting Chains.

Master links: AW, MW, Transition link: BW

IV-leg master link assemblies: VW, VMW, VAW

Special master link assemblies: VLW, VSAW, VSW 2/4

Purpose: Chain legs are incorporated into these master links. Please note that a maximum of two chain legs may be mounted directly into one master link. They constitute the link between the lifting chain and the crane hook and/or the hook or supporting arm of the load. Information on the largest crane hook according to DIN 15401 and DIN 15402 to which a master link and/or set may be attached, as well as dimensions, max. load capacities and suitability of chain types, are to be found in the corresponding section of the pewag winner G10 lifting catalogue, and online at www.pewag.com. BW transition links function as the connecting links between the master link/master link assembly and the chain, or the chain and the hook.

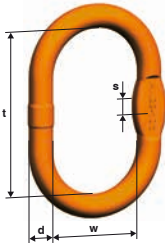
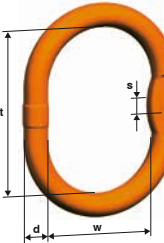
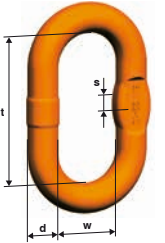
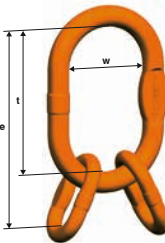
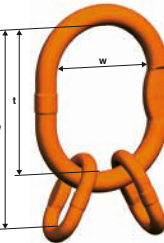
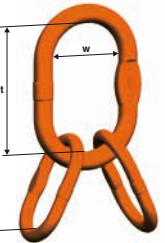
Important: Welded chain slings may only be assembled by the manufacturer!

AW, MW and BW may also be used as end links in chain slings, to link them to the crane hook and/or the load.

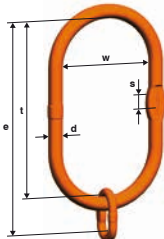
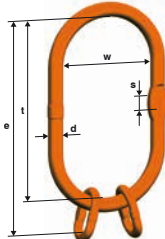
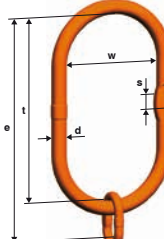
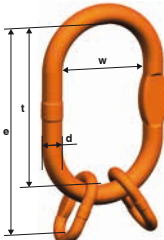
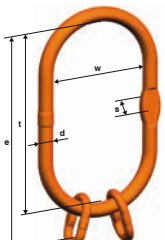
AW and MW may only be used for the assembly of 1- and 2-leg chain slings.

VW, VMW and VAW are used to assemble 3- and 4-leg chain slings using Connex connecting links or BW transition links. VSW are used to assemble 2-, 3- or 4-leg chain slings using Connex connecting links or BW transition links. VLW and VSAW are used to assemble 1-, 2-, 3- or 4-leg chain slings using Connex connecting links or BW transition links. The information on the number of legs and the chain dimension may be found in the article code. See the corresponding sections in the pewag winner G10 lifting catalogue or on the pewag website.

Load: Links must be loaded in a longitudinal direction and evenly. The angle of inclination of the mounted chain legs must not exceed 60°. All master links must be free to move and to align themselves in the load direction. For use in rope lashings, please note that the indicated load capacity applies with a safety factor of 4!

AW Master link	Code	MW Enlarged master link	Code	BW Transition link	Code
	AW 10 AW 13 AW 16 AW 18 AW 22 AW 26 AW 32 AW 36 AW 45 AW 50 AW 56 AW 72		MW 10 MW 13 MW 16 MW 18 MW 22 MW 26 MW 32 MW 36 MW 56		BW 7 BW 8 ¹⁾ BW 9 BW 10 BW 13 BW 16 BW 20 BW 22 BW 23 ¹⁾ BW 26 BW 27 ¹⁾ BW 32 BW 36 BW 40 BW 45 ¹⁾ BW 50
	VW 5 VW 6 VW 7/8 VW 10 VW 13 VW 16 VW 19/20 VW 22 VW 26 VW 32		VMW 6 VMW 7/8 VMW 10 VMW 13 VMW 16 VMW 19/20 VMW 22		VAW 6/7 VAW 8 VAW 10 VAW 13 VAW 16 VAW 19/20 VAW 22 VAW 26 VAW 32

¹⁾ Only in welded systems.

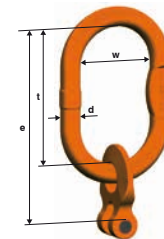
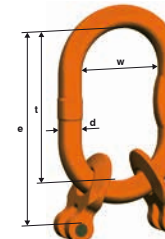
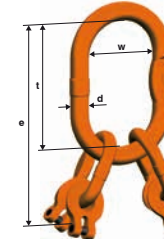
VLW 1 Master link assembly	Code	VLW 2/4 Master link assembly	Code	VSAW 1 Master link assembly	Code
	VLW 1-6/7/8 VLW 1-10 VLW 1-13 VLW 1-16 VLW 1-19/22		VLW 2-6/7/8/4-6 VLW 2-10/4-7/8 VLW 2-13/4-10 VLW 2-16/4-13 VLW 2-19/4-16		VSAW 1-10/13 VSAW 1-16 VSAW 1-19 VSAW 1-22 VSAW 1-26 VSAW 1-32 VSAW 1-32 / 320
VSAW 2 Master link assembly	Code	VSW 2/4 Oversize master link assembly	Code		
	VSAW 2-10/13 / 4-10 VSAW 2-16 / 4-13 VSAW 2-19/20 / 4-16 VSAW 2-22 / 4-19/20 VSAW 2-26 / 4-22 VSAW 2-26 / 4-22 / 320		VSW 2-10 / 4-8 VSW 2-13 / 4-10 VSW 2-16 / 4-13 VSW 2-19/20 / 4-16		

Clevis master sets: KAGW, KMGW, VXKW, VMXKW, LXKW

Purpose: These assemblies link the lifting chain and the crane hook. The largest crane hook according to DIN 15401 or DIN 15402, into which a dome suspension fitting can be suspended, as well as dimensions, max. load capacities and the assignment to the right chain are shown in the relevant sections of the pewag winner G10 lifting catalogue as well as online at www.pewag.com. Depending on the number of the incorporated connecting links (KRW coupling rings, XKW shortening hooks with clevis system), between 1 and 4 chain legs are linked using the KAGW, KMGW, VXKW, VMXKW and LXKW. For detailed information on the components used, please consult the corresponding sections in this operating manual.

Load: Assemblies must be placed under load in a longitudinal direction and evenly. The angle of inclination of the mounted chain legs must not exceed 60°. The assemblies must be free to move in line with the operating forces.

Spare parts: See the section "spare parts" in the pewag winner G10 lifting catalogue or on the pewag website.

KAGW 1 Clevis master set	Code	KAGW 2 Clevis master set	Code	KAGW 4 Clevis master set	Code
	KAGW 1-6 ¹⁾ KAGW 1-7 KAGW 1-8 KAGW 1-10 KAGW 1-13 KAGW 1-16 KAGW 1-19/20 KAGW 1-22		KAGW 2-6 ¹⁾ KAGW 2-7 KAGW 2-8 KAGW 2-10 KAGW 2-13 KAGW 2-16 KAGW 2-19/20 KAGW 2-22		KAGW 4-6 ¹⁾ KAGW 4-7 KAGW 4-8 KAGW 4-10 KAGW 4-13 KAGW 4-16 KAGW 4-19/20 KAGW 4-22

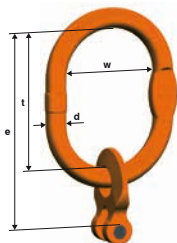
¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

KMGW 1
Enlarged clevis master set

Code

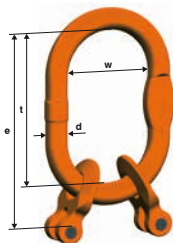


KMGW 1-6¹⁾
KMGW 1-8
KMGW 1-10
KMGW 1-13
KMGW 1-16

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

KMGW 2
Enlarged clevis master set

Code

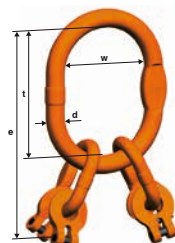


KMGW 2-6¹⁾
KMGW 2-8
KMGW 2-10
KMGW 2-13
KMGW 2-16

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

KMGW 4
Enlarged clevis master set

Code

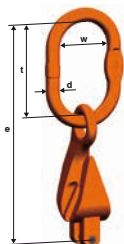


KMGW 4-6¹⁾
KMGW 4-8
KMGW 4-10
KMGW 4-13
KMGW 4-16

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

VXKW 1
Clevis master set

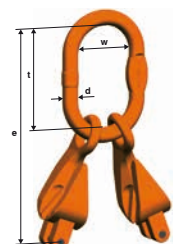
Code



VXKW 1-5
VXKW 1-6
VXKW 1-7
VXKW 1-8
VXKW 1-10
VXKW 1-13
VXKW 1-16

VXKW 2
Clevis master set

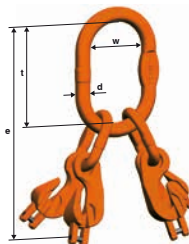
Code



VXKW 2-5
VXKW 2-6
VXKW 2-7
VXKW 2-8
VXKW 2-10
VXKW 2-13
VXKW 2-16

VXKW 4
Clevis master set

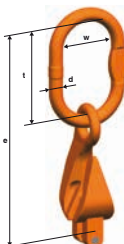
Code



VXKW 4-5
VXKW 4-6
VXKW 4-7
VXKW 4-8
VXKW 4-10
VXKW 4-13
VXKW 4-16

VMXKW 1
Clevis master set

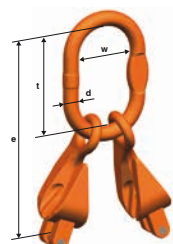
Code



VMXKW 1-6
VMXKW 1-8
VMXKW 1-10
VMXKW 1-13
VMXKW 1-16

VMXKW 2
Clevis master set

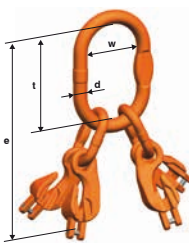
Code



VMXKW 2-6
VMXKW 2-8
VMXKW 2-10
VMXKW 2-13
VMXKW 2-16

VMXKW 4
Clevis master set

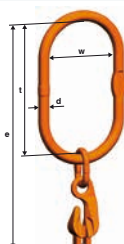
Code



VMXKW 4-6
VMXKW 4-8
VMXKW 4-10
VMXKW 4-13
VMXKW 4-16

LXKW 1
Oversize clevis master set

Code

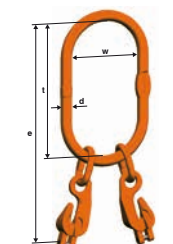


LXKW 1-6¹⁾
LXKW 1-8
LXKW 1-10
LXKW 1-13
LXKW 1-16

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

LXKW 2
Oversize clevis master set

Code

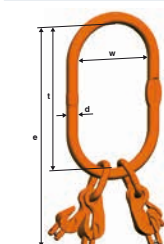


LXKW 2-6¹⁾
LXKW 2-8
LXKW 2-10
LXKW 2-13
LXKW 2-16

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

LXKW 4
Oversize clevis master set

Code



LXKW 4-6¹⁾
LXKW 4-8
LXKW 4-10
LXKW 4-13
LXKW 4-16

¹⁾ May also be used with a 5 mm chain if load capacity is adjusted accordingly.

Connecting links: CW, CLW, CARW

Purpose: When assembling lifting chains, CW and CLW connecting links serve to link chains with master links/master link assemblies, chains with hooks, master link and hook and much more in the assembled system. The right chain dimension is indicated by the code (e.g. CW 13) and the grade (10). Components are also marked with this information. CW 13, for instance, should be used with winner 13 mm chains and accessories.

CARW: Connecting links for the assembly of lifting belts and roundslings.

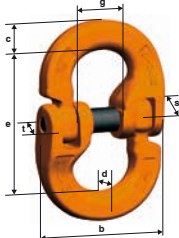
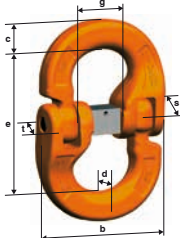
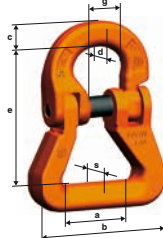
CW, CARW: It is recommended to use a new bolt and safety bush once the product has been assembled and disassembled three times.

CLW: These connecting links may not be disassembled after assembly and are intended for special applications, where the bolt must not be detached (such as chain slings for lifting magnets or concrete buckets).

For detailed information on load capacities and dimensions, please refer to the pewag winner G10 lifting device catalogue or the pewag website.

Load: Only in a longitudinal direction and at the bearing area, with the maximum load capacity as stated in the pewag winner G10 lifting device catalogue. The connecting links must be free to align with the direction of the load. If two parts are mounted into one half of the connecting link, only one part must be loaded during the lifting process. The part must also be free to move in the bearing area.

Spare parts: See the section "spare parts" in the pewag winner G10 lifting catalogue or on the pewag website.

CW Connex connecting link	Code	CLW Connex connecting link	Code	CARW Round sling connecting link	Code
	CW 5		CLW 7		CARW 8
	CW 6		CLW 10		CARW 10
	CW 7		CLW 13		CARW 13
	CW 8		CLW 16		CARW 16
	CW 10				CARW 22
	CW 13				
	CW 16				
	CW 19/20				
	CW 22				
	CW 26				
	CW 32				

AGWW Load distributors

Purpose: AGWW load distributors serve to balance out the admissible length tolerances of chain legs in 4-leg chain slings as well as inaccuracies in the constellation of the lifting points. Once this has been done, all four chain legs may be considered load-bearing, thereby increasing the load capacity of the chain sling. See load capacity table in the winner G10 lifting catalogue or on the pewag website. They may also be incorporated in a 2-leg chain sling. If two 2-leg chain slings are used simultaneously and one of them is equipped with a load distributor, the system may be regarded as a 4-leg chain sling with 4 load-bearing legs.

Please note: For this sort of application, the angle of inclination must not exceed 45°, due to the design of the crane hooks. Whether 4 leg chains may be classified as load-bearing must be determined on a case-by-case basis by a competent person to rule out over-loading. In this context, the following safety rules must be followed at all times:

BGR 500: Load discrepancy of up to 10 % in the chain legs may be disregarded. This case arises if the angles of inclination of the individual chain legs differ from one another as follows:

- Angle of inclination of up to 45° – maximum difference of 6°
- Angle of inclination of up to 60° – maximum difference of 3°

EN 818-6: The load distribution can still be considered symmetrical if all the following conditions apply:

- Load is lighter than 80 % of the indicated load capacity.
- Angles of inclination of all chain legs no smaller than 15°.
- Angles of inclination of all chain legs do not differ by more than 15°.
- For three- and four-stranded lifting chains, it must be ensured that the corresponding plane angles are within 15° of each other.

Thanks to their special design, AGWW load distributors offer an additional advantage: if elimination criteria apply to the eyes, they may be turned by 180° for continued use (see images).

For detailed information on load capacities and dimensions, please refer to the pewag winner G10 lifting catalogue or the pewag website.

Load: Load may only be placed in the eyes. Load distributors must be able to align themselves in the load direction.

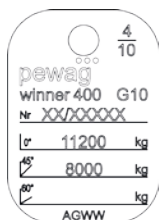
Assembly: The components may only be assembled by competent persons who have the necessary skills and knowledge. AGWW load distributors are linked to the chain/the master link assembly through the eyes using Connex connecting links. Please refer to the winner G10 lifting catalogue for choosing the right connecting links for mounting the AGWW to the master link assembly.

Suitable master link assemblies:

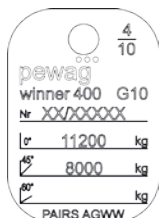
AGWW 5/6: VW 6 / VMW 6 / VAW 6/7
AGWW 7/8: VW 7/8 / VMW 10 / VAW 10
AGWW 10: VW 13 / VMW 13 / VAW 13
AGWW 13: VW 16 / VMW 16 / VAW 16
AGWW 16: VW 19/20 / VMW 19/20 / VAW 19/20
AGWW 19/20: VW 22 / VMW 22 / VAW 19/20
AGWW 22: VW 26 / VAW 26
AGWW 26: VAW 32

Marking of a IV-leg sling: Additionally to the standard marking the tag is marked with "AGWW".

Example:



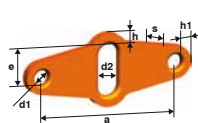
Marking of tags when 2 II-leg slings are used at the same time where one is assembled with an AGWW: Each tag of the 2 II-leg slings is marked with the higher WLL's and additional with "PAIRS AGWW". See picture. If the slings are not used together, the WLL must be reduced to that for a standard II-leg sling.



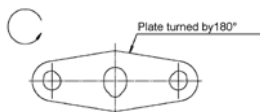
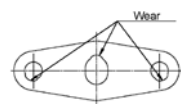
The right chain dimension is indicated by the code (e.g. AGWW 13) and the grade (10). Components are also marked with this information. AGWW 13, for instance, should be used with winner 13 mm chains and accessories.

AGWW Load distributor

Code



AGWW 5/6
AGWW 7/8
AGWW 10
AGWW 13
AGWW 16
AGWW 19/20
AGWW 22
AGWW 26



Hook type: HSW, LHW, WLHW, WLHBW, WSBW, FW, PW, PSW, XKW, KHSW, BKHSW, KCHW, KLHW, KFW, KPW, KPSW

Purpose: End hooks or master hooks for the quick and easy linking of the lifting chain with the load or a different load lifting device, or for shortening chain strands. Furthermore, they may be hooked into the chain to form loops. Always ensure that safety catches close fully after the connecting process has been completed. The safety catch prevents the unintentional release of the hook and must therefore always be present.

Exceptions:

FW, KFW, KCHW: As these hooks do not come with a safety catch, check that the use of hooks without a safety catch is admissible prior to each use. This may for instance be the case if the operation of the safety catch itself constitutes a larger risk than the use of the hook without a safety catch.

LHW, KLHW, WLHW, WLHBW: The safety catch may be closed manually or closes and locks automatically when the load is attached. This means that, when the safety catch is closed, hooks also remain safely attached when not under load. The locking mechanism must be released before the hook may be opened.

WLHBW safety hooks come with a bearing and are therefore suitable for turning under load. Please note the max. operating temperature of 120 °C!

PW, PSW, KPW, KPSW, XKW: The shortening hooks PW, PSW, KPW, KPSW and XKW are used to shorten chain strands in lifting chains of the same nominal size. PW, PSW, KPW and KPSW may also be used to form slings that should not tighten.

PSW, KPSW: The safety mechanism prevents the unintentional release of the attached chain.

XKW: Not intended for the formation of loops, i.e. the chain leg mounted in the clevis must not be wrapped around the load and then be re-attached to the slot in the hook. It is not admissible to form two load-bearing strands with a single hook, for instance by hooking another chain leg into the shortening hook. The product is linked to the eye using Connex connecting links. In the welded system with BW transition links, the following hooks may be linked to the chain/chain assemblies: HSW, FW, PW, PSW, XKW. Hooks with a clevis system are linked directly to the chain with the clevis. The right chain dimension is indicated by the code (e.g. HSW 13) and the grade (10). Components are also marked with this information. HSW 13, for instance, should be used with winner 13 mm chains and accessories. For detailed information on max. load capacities and dimensions, please refer to the pewag winner G10 lifting catalogue or the pewag website.

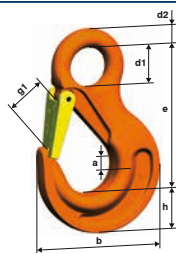
Load: Only in a longitudinal direction at the bearing area at maximum load capacity, with the hooks being free to align themselves with the load direction.

For detailed information on max. load capacities and dimensions, please refer to the pewag winner G10 lifting catalogue or the pewag website.

Spare parts: See the section "spare parts" in the pewag winner G10 lifting catalogue or on the pewag website.

HSW Eye sling hook

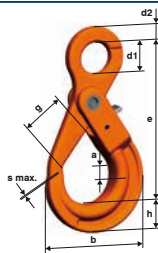
Code



HSW 5/6
HSW 7/8
HSW 10
HSW 13
HSW 16
HSW 19/20
HSW 22
HSW 26
HSW 32

LHW Safety hook

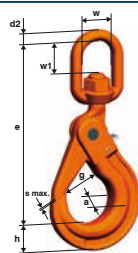
Code



LHW 5/6
LHW 7/8
LHW 10
LHW 13
LHW 16
LHW 19/20
LHW 22

WLHW Swivel safety hook

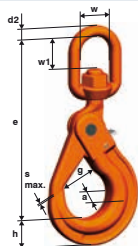
Code



WLHW 5/6
WLHW 7/8
WLHW 10
WLHW 13
WLHW 16

WLHBW Swivel safety hook

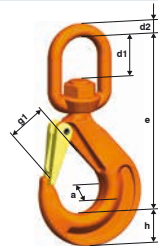
Code



WLHBW 5/6
WLHBW 7/8
WLHBW 10
WLHBW 13
WLHBW 16

WSBW Swivel hook

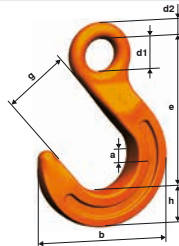
Code



WSBW 7/8
WSBW 10
WSBW 13

FW Foundry hook

Code



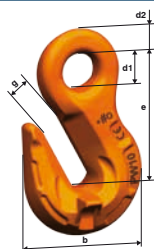
FW 7/8
FW 10
FW 13
FW 16
FW 19/20
F 22 ¹⁾
F 26 ²⁾
F 32 ¹⁾

¹⁾ Grade 80

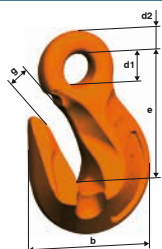
²⁾ Not suitable for assembly with Unilock (G8)

PW Grab hook

Code



Shape with support surface



Shape without support surface

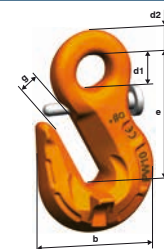
Code

PW 5
PW 6
PW 7/8
PW 10
PW 13
PW 16
PW 19/20 ¹⁾
PW 22 ¹⁾
PW 26 ¹⁾
PW 32 ¹⁾

¹⁾ Shape with support surface

PSW Grab hook with safety catch

Code



PSW 7/8
PSW 10
PSW 13
PSW 16

XKW Clevis shortening hook

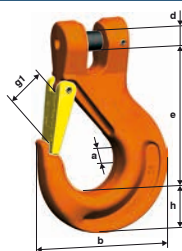
Code



XKW 5/6
XKW 7
XKW 8
XKW 10
XKW 13
XKW 16

KHSW Clevis sling hook

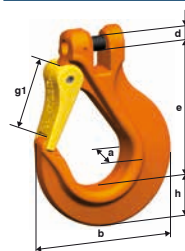
Code



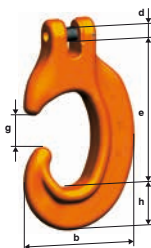
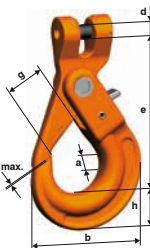
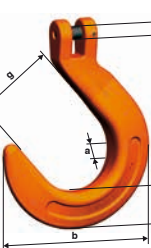

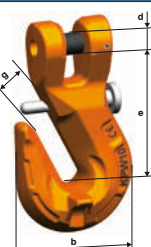
KHSW 5/6
KHSW 7
KHSW 8
KHSW 10
KHSW 13
KHSW 16
KHSW 19/20
KHSW 22

BKHSW Oversize clevis sling hook

Code



BKHSW 8
BKHSW 10

KCHW Clevis C-hook	Code	KLHW Clevis safety hook	Code	KFW Clevis foundry hook	Code
	KCHW 7 KCHW 8 KCHW 10 KCHW 13 KCHW 16		KLHW 5/6 KLHW 7 KLHW 8 KLHW 10 KLHW 13 KLHW 16 KLHW 19/20 KLHW 22 KLHW 26		KFW 7 KFW 8 KFW 10 KFW 13
KPW Clevis grab hook	Code	KPSW Clevis grab hook with safety catch	Code		
	KPW 6 KPW 7 KPW 8 KPW 10 KPW 13 KPW 16 KPW 19/20 ¹⁾ KPW 22 ¹⁾ ¹⁾ Shape with support surface		KPSW 7 KPSW 8 KPSW 10 KPSW 13 KPSW 16		
Shape with support surface		Shape without support surface			

SCHW Shackle, GSCHW Bow shackle, KSCHW Clevis shackle

Purpose: SCH and GSCHW shackles and KSCHW clevis shackles are used as end fittings or attachment parts to enable the quick and easy linking of the lifting device with the load or a different lifting device. After connecting, the safety bolt must always be tightened and, for clevis shackles, the nut must be secured using the splint in order to prevent unintentional loosening. KSCHW clevis shackles are linked directly to the chain with the clevis system. SCHW and GSCHW shackles cannot be linked directly to the chain. They are linked using Connex connecting links or BW transition links that are welded to the end of the chain legs. The right chain dimension is indicated by the code (e.g. KSCHW 13) and the grade (10). Components are also marked with this information. KSCHW 13, for instance, should be used with winner 13 mm chains and accessories. For detailed information on max. load capacities and dimensions, please refer to the G10 lifting catalogue or the pewag website.

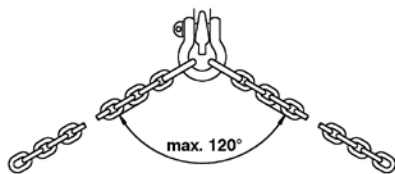
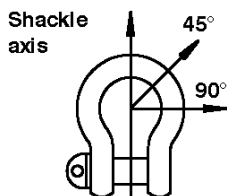
Load:

SCHW, GSCHW, KSCHW: Only in a longitudinal direction, at the centre of the bolt, or with evenly distributed loads across the entire length of the bolt at maximum load capacity. Please note that the shackles must be free to align themselves with the direction of the load.

GSCHW Bow shackle: May also be used in connection with 2 chain legs. The angle between the chain legs must not exceed 120 °C and the legs must be placed in the shackle bracket. Straight SCHW shackles must not be used in these cases.

Side loads: Side loads should be avoided as the shackles are not designed for them. Where side loads occur, the load capacity must be reduced:

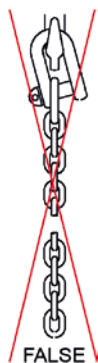
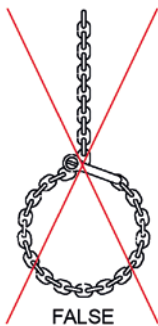
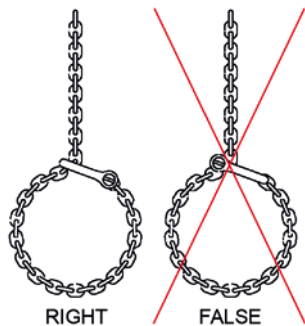
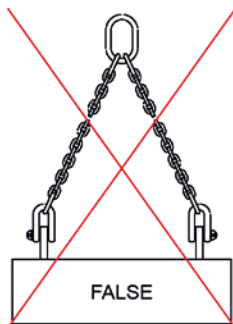
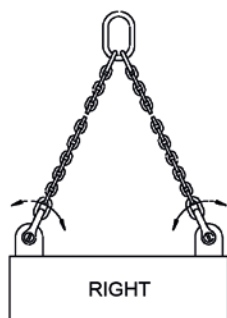
- Loading on the shackle axis: 100 % of the WLL.
- Side loading 45°: 70 % of the WLL.
- Side loading 90°: 50 % of the WLL.

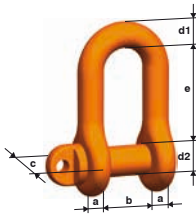
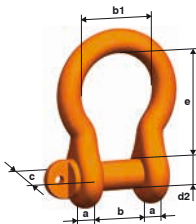
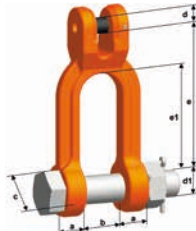


Point loads: Shackles are suitable for point loading, as long as the diameter of the component is the same or larger than the diameter of the shackle bracket. Large diameters and/or flat elements (attached to the side of the bolt) have enormous advantages thanks to the larger contact surface. Sharp edges should be avoided.

Avoid applications where movements may cause the bolt to twist and become loose in the process. In such cases, or if the shackle remains incorporated for a prolonged period of time, or if maximum bolt safety is required, use shackles with a bolt, nut and splint. To prevent off-centre loads, loose spacers may be placed on both sides of the bolt. The opening of the shackle must not be reduced by bending the eyes of the shackle or welding on discs or other spacers to the inside of the shackle.

Spare parts: See the section "spare parts" in the pewag winner G10 lifting catalogue or on the pewag website.



SCHW Shackle	Code	GSCHW Curved Shackle	Code	KSCHW Clevis Shackle	Code
	SCHW 5		GSCHW 7/8		KSCHW 7
	SCHW 6		GSCHW 10		KSCHW 8
	SCHW 7/8		GSCHW 13		KSCHW 10
	SCHW 10		GSCHW 16		KSCHW 13
	SCHW 13				
	SCHW 16				

BWW Sheet Metal plate hook, GHW Fork hook

Purpose: BWW sheet metal plate hooks and GHW fork hooks are used for lifting and transporting sheet metal stacks, plates or similar.

Load:

BWW: Due to the narrow contact surface, lifting operations require 3- or 4-leg chain slings. Hooks must be fully pushed onto the load. Tip-loading must be avoided.

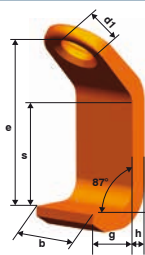
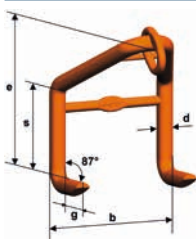
- If a 3-leg chain sling is used, the load capacity of the corresponding 2-leg chain sling applies.
 - If a 4-leg chain sling is used, the load capacity of the corresponding 3-leg chain sling applies.
- The angle of inclination of the chain sling should be set between 15° and 30°, e.g. by using a shortener. If rectangular plates are lifted, the spread angle of the chain legs on one side must be set to approx. 10°.

For the lifting of round loads, chain strands must be distributed evenly across the circumference.

BWW sheet metal plate hooks are linked to the chain at the eye, GHW fork hooks at the BW transition link, using a Connex connecting link. The right chain dimension is indicated by the code (e.g. BWW 13) and the grade (10). Components are also marked with this information. BWW 13, for instance, should be used with winner 13 mm chains and accessories.

GHW: Must be used in pairs. Chain slings must be placed under load symmetrically, with an angle of inclination from 30° to 45°. Where required, this angle must be set using a shortening element. Hooks must be fully pushed onto the load.

For detailed information on max. load capacities and dimensions, please refer to the pewag winner G10 lifting catalogue or the pewag website.

BWW Sheet metal plate hook	Code	GHW Fork hook	Code
	BWW 7/8		GHW 5/6
	BWW 10		GHW 7/8
	BWW 13		GHW 10
	BWW 16		
	BWW 19/20		
	BWW 22		

Custom designs are available upon request!

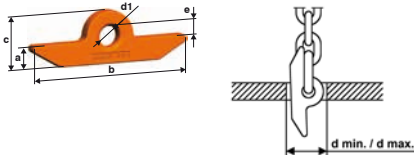
Custom designs are available upon request!

KNEW Toggles

KNEW Toggles link the lifting chain to the load. To use them, the load must come with a hole with a diameter between d_{min} and d_{max} into which the toggle is inserted. Where non-circular openings are used, the circumference of the opening must be smaller than d_{max} . Once the toggle has been set in a cross-wise position, both arms are able to hold the load at the areas bordering onto the hole/opening. This method is generally used for the lifting and transporting of sheet piles. The toggle is linked to the chain using a 10 mm chain link. For detailed information on max. load capacities and dimensions, please refer to the pewag winner G10 lifting catalogue or the pewag website.

Load:

Only when the toggle has been set to a crosswise position and the chain is aligned straight, at maximum load capacity. The areas next to the drill hole must be strong enough to absorb the forces that occur.

KNEW Toggle	Code
	KNEW 8

KOW Clevis reeving link

Purpose:

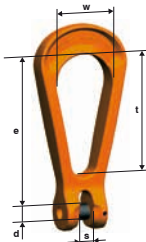
Clevis reeving links are used as master links or end links in lifting chains. They connect the lifting chain with the crane hook or the load. When they are used as end links, it is possible to form a loop by pulling the chain through the eye of the clevis reeving link. The loop must be large enough to ensure that the clevis reeving link does not touch the load directly. Clevis reeving links are linked directly with the chain at the clevis. For detailed information on max. load capacities and dimensions, please refer to the pewag winner G10 lifting catalogue or the pewag website.

Load:

Only in a longitudinal direction and at maximum load capacity. Clevis reeving links must be free to align themselves in the load direction.

Spare parts:

See the section "spare parts" in the pewag winner G10 lifting catalogue or on the pewag website.

KOW Clevis reeving link	Code
	<div>KOW 7</div> <div>KOW 8</div> <div>KOW 10</div> <div>KOW 13</div> <div>KOW 16</div>

KRW Coupling ring

Purpose:

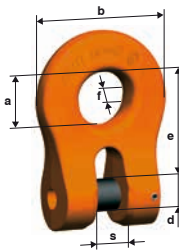
When adjusting lifting chains, these coupling rings serve as connecting links of pewag lifting chains of the same nominal size. They are mounted in the master links using the eye. It is also possible to link them to other lifting devices in the same way. For detailed information on max. load capacities and dimensions, please refer to the pewag winner G10 lifting catalogue or the pewag website.

Load:

Only in a longitudinal direction and at maximum load capacity. Coupling rings must be free to align themselves in the load direction.

Spare parts:

See the section "spare parts" in the pewag winner G10 lifting catalogue or on the pewag website.

KRW Coupling ring	Code
	KRW 5/6
	KRW 7
	KRW 8
	KRW 10
	KRW 13
	KRW 16
	KRW 19/20
	KRW 22

EN

AWHW Weld-on hook

Purpose:

These weld-on hooks serve as master hooks for connecting the lifting chain with the lifting device in a quick and straightforward manner. After the connection has been made, it must always be possible to close the safety catch. The safety catch prevents the unintentional loosening of the load and must therefore be present at all times.

If a hook is to be welded onto earth-moving machine's blades, this must have been approved by the manufacturer of the earth-moving machine. It must then be welded on in such a way that:

- The hook can withstand any load when the bucket is in various positions.
- It is impossible for the lifting device to be moved away from the perpendicular by other structural components and for possible damage to be caused by other structural components of the earth-moving machine, e.g. sharp edges.
- There are no danger zones (crushing and shearing points, rotating parts) for the lifter.
- Unintentional loosening of the lifting device is to be avoided.
- The hook can be reached easily for attaching and removing the lifting device, and ideally without any obstructions, even when the bucket is set down.
- When using in excavator or lifting mode, nothing gets stuck on or is obstructed by the hooks.

After completion of the assembly work, a qualified person is to carry out an inspection to determine whether there are any concerns about the hook being put in operation.

For detailed information on max. load capacities and dimensions, please refer to the G10 lifting device catalogue or the pewag website.

Load:

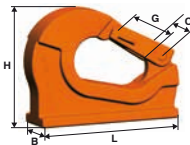
The admissible load capacities correspond to the load sectors (enclosed). The attached lifting device mustn't get jammed. Transverse loading is not permitted.

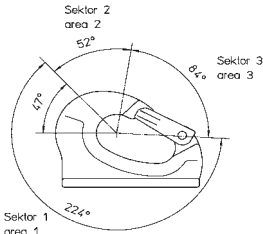
Welding instruction:

The welding instructions are included in the scope of delivery and must be complied with.

Spare parts:

See the section "spare parts" in the pewag winner G10 lifting catalogue or on the pewag website.

AWHW Weld on hook	Code
	AWHW 1,3
	AWHW 3,8
	AWHW 6,3
	AWHW 10




Code	Working load limits in [to]		
	Area 1	Area 2	Area 3
AWHW 1,3	1,3	1	0,3
AWHW 3,8	3,8	2,8	0,9
AWHW 6,3	6,3	4,7	1,5
AWHW 10	10	7,5	2,5

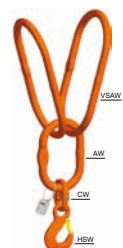
ÜW Transition assemblies for single hooks according to DIN 15401 and for double hooks according to DIN 15402

Purpose:

These transition assemblies (reduction assemblies) serve as transitions between single hooks acc. to DIN 15401 or double hooks acc. to DIN 15402 to pewag HSW eye sling hooks. Please refer to the table for the largest-size hook that may be attached to a transition assembly. For the designated use of the individual components of the transition assembly, see the individual sections of this operating manual. The master links (VSAW or AW) are the connecting elements to the single or double hook. The eye sling hook lifts the master link/the eye of a lifting device or load. After the connection has been made, it must always be possible to close the safety catch. The safety catch prevents the unintentional loosening of the load and must therefore be present at all times. For detailed information on max. load capacities and dimensions, please refer to the G10 lifting catalogue or the pewag website.

Load: Only in straight pull, at maximum load capacity as stated in the enclosed table and/or the load capacity tag. The hook may only be loaded at the bearing area. All parts must be free to align themselves in the load direction.

ÜW Transition assembly	Code	Single hook DIN 15401	Load capacity [kg]	Consisting of	Weight [kg/pc.]
	ÜW 32/16 I AW-HSW Connex	32	16,000	AW 50/CW 26/HSW 19/20	28.86
	ÜW 32/19 I AW-HSW Connex	32	19,000	AW 50/CW 26/HSW 22	30.54
	ÜW 32/26,5 I AW-HSW Connex	32	26,500	AW 50/CW 26/HSW 26	36.89
	ÜW 50/4 I VSAW-HSW Connex	50	4,000	VSAW 1-16/CW 16/HSW 10	12.54
	ÜW 50/6,7 I VSAW-HSW Connex	50	6,700	VSAW 1-16/CW 16/HSW 13	13.73
	ÜW 50/10 I VSAW-HSW Connex	50	10,000	VSAW 1-16/CW 16/HSW 16	15.05
	ÜW 50/16 I VSAW-HSW Connex	50	16,000	VSAW 1-22/CW 22/HSW 19/20	28.22
	ÜW 50/19 I VSAW-HSW Connex	50	19,000	VSAW 1-22/CW 22/HSW 22	29.90
	ÜW 50/26,5 I VSAW-HSW Connex	50	26,500	VSAW 1-26/CW 26/HSW 26	41.89
	ÜW 50/40 I AW-HSW Connex	50	40,000	AW 72/CW 32/HSW 32	80.76
	ÜW 100/26,5 I VSAW-HSW Connex	100	26,500	VSAW 1-32/320/CW 26/HSW 26	68.89
	ÜW 100/40 I VSAW-HSW Connex	100	40,000	VSAW 1-32/320/CW 32/HSW 32	87.26

ÜW Transition assembly	Code	Double hook DIN 15402	Load capacity [kg]	Consisting of	Weight [kg/pc.]
	ÜW 50/4 II VSAW-HSW Connex	50	4,000	2xVSAW 1-16/AW36/ CW16/HSW10	28.09
	ÜW 50/6,7 II VSAW-HSW Connex	50	6,700	2xVSAW 1-16/AW36/ CW16/HSW13	29.28
	ÜW 50/10 II VSAW-HSW Connex	50	10,000	2xVSAW 1-16/AW36/ CW16/HSW16	30.60
	ÜW 50/16 II VSAW-HSW Connex	50	16,000	2xVSAW 1-16/AW36/ CW19/20/HSW19/20	33.10
	ÜW 50/19 II VSAW-HSW Connex	50	19,000	2xVSAW 1-22/AW50/ CW26/HSW22	67.09
	ÜW 50/26,5 II VSAW-HSW Connex	50	26,500	2xVSAW 1-22/AW50/ CW26/HSW26	73.44
	ÜW 50/36 II VSAW-HSW Connex	50	36,000	2xVSAW 1-22/AW50/ CW32/HSW32	91.81
	ÜW 100/26,5 II VSAW-HSW Connex	100	26,500	2xVSAW 1-32/320/AW50/ CW26/HSW26	133.44
	ÜW 100/40 II VSAW-HSW Connex	100	40,000	2xVSAW 1-32/320/AW50/ CW32/HSW32	151.81

VSAW angle of inclination: max. 35°.

The Declaration of Incorporation is valid for the following products:

Chain winner 200, chain winner 400, AW, MW, BW, VW, VMW, VAW, VLW, VSAW, KAGW, KMGW, VXKW, VMXKW, LXXKW, CW, CLW, CARW, AGWW, HSW, LHW, WLHW, WLHBW, WSBW, FW, PW, PSW, XKW, BWW, GHW, KNEW, KRW, KOW, KHSW, BKHSW, KCHW, KLHW, KFW, KPW, KPSW, KSCHW, AWHW

The Declaration of Conformity is valid for the following products:

SCHW, GSCHW, ÜW

Declaration of incorporation

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

Please note that the products described in this operating manual are intended for incorporation into lifting devices according to Machinery Directive 2006/42/EC. Products must not be used until it has been declared that the lifting device in which they were incorporated corresponds to the provisions of the Directive. Prior to using this product for the first time, the operating manual must have been read and understood in full. Any modifications carried out on the product that were not authorised in advance by pewag shall result in these declarations losing their validity.

The following essential health and safety requirements according to Appendix I of the Directive apply and shall be complied with: 1.1.3, 1.3.4, 1.5.4, 4.1.2.3, 4.1.2.5, 4.3, 4.4.1

The special technical documents according to Appendix VII, part B, have been compiled and shall, further to a substantiated request from a competent national authority, be made available in electronic form.

Representative for the compilation of technical documents:

DI Bernhard Oswald; Mariazeller Straße 143; A-8605 Kapfenberg

Kapfenberg, 2019-01-01

pewag austria GmbH



Stefan Duller

Declaration of conformity

in accordance with Appendix II B of Machinery Directive 2006/42/EC and in the Machinery Safety Regulations (MSV) 2010 for components in lifting accessories:

Authorised representative for technical documentation in accordance with Annex VII, Part A:

DI Bernhard Oswald; Mariazeller Straße 143; A-8605 Kapfenberg

We declare under our sole responsibility that the products for which this operating manual is valid comply with the regulations of Directive 2006/42/EC. Any modifications carried out on the product that were not authorised in advance by pewag shall result in this declaration losing its validity.

Following Norms are applied and fulfilled:

EN 818 Part 4 modified.

Prior to using this product for the first time, the operations manual must have been read and understood in full.

Kapfenberg, 2019-01-01

pewag austria GmbH



Stefan Duller





pewag austria GmbH
A-8041 Graz, Gaslaternenweg 4
Phone: +43 (0) 50 50 11-0
Fax: +43 (0) 50 50 11-100
saleinfo@pewag.com
www.pewag.com