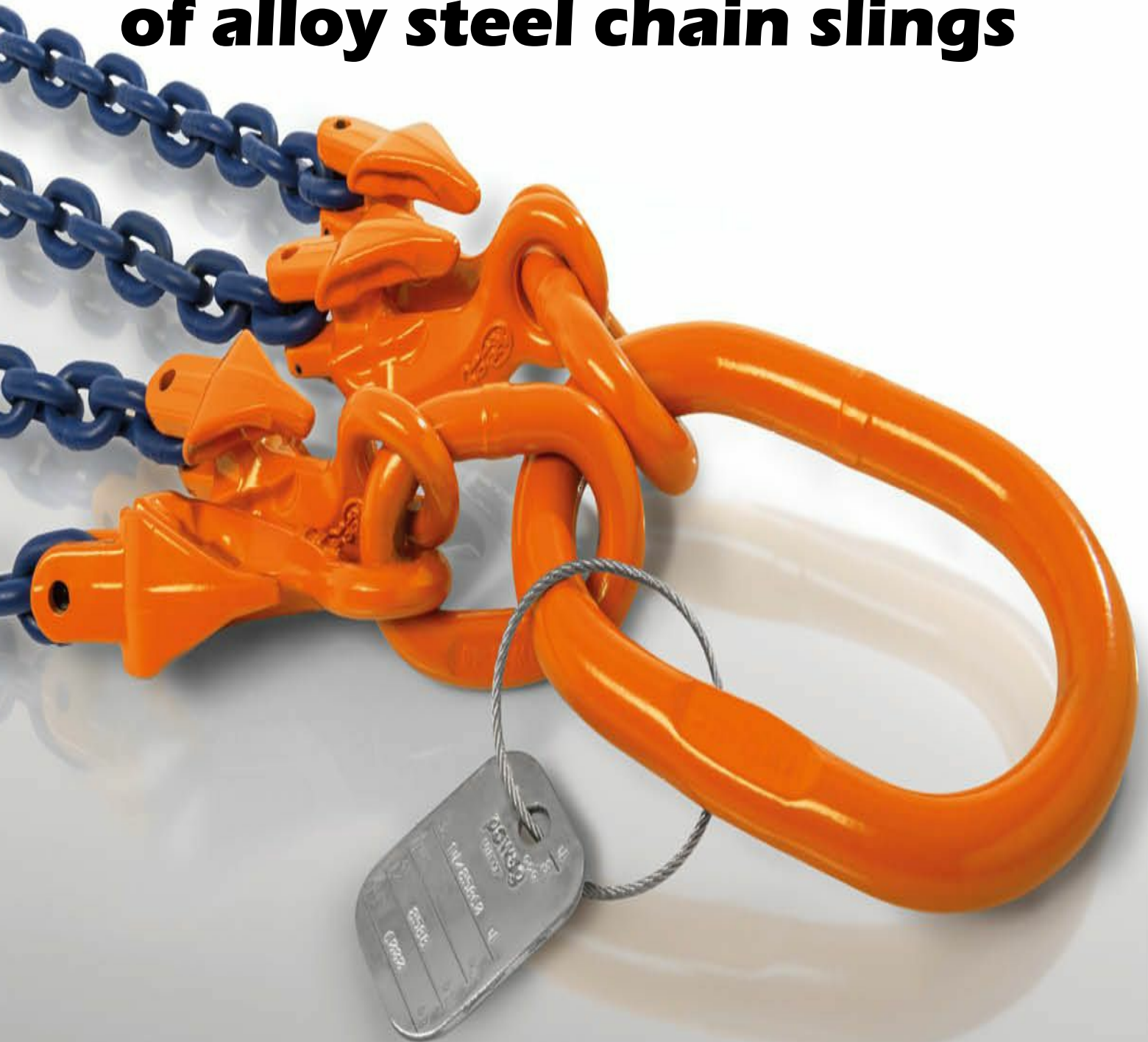


DLHONLINE

A guide for the selection of alloy steel chain slings



dlhonline.co.uk

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Overview

This guide is designed to give an overview of alloy steel chain slings for general use. It is intended for the buyer or user, who may need some guidance on the types of load configuration and fittings available.

For more details on technical data and dimensions on the equipment featured in this guide we refer you to the manufacturer's brochures - [Click Here](#)

Why use alloy steel chain slings?

Alloy steel chain slings are one of the most durable and robust types of rigging available. Industrial lifting slings fabricated from chain offer slingers several important advantages over wire rope slings, nylon web slings, and polyester round slings.



Chain slings are more temperature tolerant, cut resistant and certain options allow chain slings to be adjustable.

Alloy chain is quenched and tempered in the wire chain fabrication process. The Chain slings we make and supply meet or exceed BS EN 818-4

The steel used in alloy steel chain slings is designed to stretch and elongate to absorb shock loads.

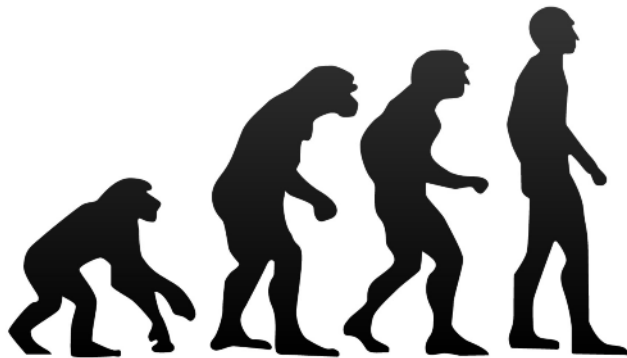


For this reason it is very important to pay particularly close attention when measuring chain slings during the in-use inspection process as permanent elongation is indicative of serious overloading and imminent failure.



Chain System Evolution

As in most industries new technology is driving improvement and the lifting industry is no exception. Until recently the most common grade of alloy lifting chain used for lifting chain slings was grade 8.



Now, as most major chain manufacturers are shifting to grade 10 lifting chain it has become more cost effective. Alloy chain is now produced in three grades. The larger the grade number, the stronger the rigging chain. Current grades available are Grade 8 lifting chain, grade 10 lifting chain and grade 12 lifting chain with fittings to match.

You may ask why haven't the manufacturer's withdrawn an earlier grade when an improvement is brought out? Unlike computer technology, lifting equipment tends to last longer and users are slow to change.

Essentially, although lighter and stronger, the new stuff looks exactly the same as the old except for the markings, component colours, and people may be reluctant to mix equipment of different grades or get rid of equipment that is still perfectly useable or they are used to using. Whatever the reason, you have the choice.

Get to know the grades here:

Grade 8 (G8, G80)



LINX-8 G8 Chain Sling System Chain slings are available in various grades and materials with the most widely used in the UK being Grade 8 (or G8) alloy. LINX-8 Grade 8 chain slings are both economical and of high quality and are available in chain sizes from 6mm to 32mm along with a comprehensive range of fittings that cover a wide variety of applications. LINX-8 G8 chain slings fully conform to EN818-4 (chain to EN818-2 and components to EN1677).

Grade 8 chain slings should not be confused with slings classified as Grade 80 as these may be manufactured using boron alloy chain, or with fittings that do not conform to EN1677 and therefore do not meet with the requirements of EN818. Whilst Grade 80 chain slings are rated with the same working load limits (WLL) as G8 slings, they may not perform equally under certain conditions.

For further details of the LINX-8 G8 chain sling range please click [HERE](#).



Grade 10 (G10, G100)



Pewag Winner G10 Chain Sling

Grade 10 (or G10) chain slings are becoming more widely used due to their increase in load capacity of +25% over Grade 8.

This increase in working load limit (WLL) allows the user in certain circumstances to select a smaller chain diameter than that of G8 which makes the sling lighter and therefore easier to handle. G10 material is also slightly harder than G8 which gives the added benefit of increased toughness and longer service life.

Pewag Winner Grade 100 chain slings are produced to the highest possible quality standards and the range of fittings available make this one of the most comprehensive chain sling systems available. Chain sizes from 5mm to 32mm offer lifting capacities of up to 85 tonnes on a four leg sling.

To see the complete range of Winner G10 products please click [HERE](#).

Grade 12 (G12, G120)



Pewag Winner Pro G12 Chain Sling
Pewag Winner Pro Grade 12 (or G12 / G120) chain slings are available offering an increase in load capacity of +20% over G10 and 50% over G8.

This allows the user to select a full chain size lower than that of G8 whilst maintaining a comparative WLL resulting in a significant weight saving.

The special profiled chain which was developed by Pewag and used in the Winner Pro G12 system offers significant improvements in bending resistance when compared to round section chains (6% increase) which is particularly useful when loading a sling over a corner.

More information on this system can be found [HERE](#).

Stock Chain and Components



DALE offer the Pewag Grade 10 chain sling system as standard, as the technology has brought with it an increased load capacity of 25% over an equivalent G8 product. And now at virtually the same price, the Pewag Grade10 chain sling system has already proved itself to be a 'Winner' and is favoured by many well respected names within the lifting equipment industry.

It has one of the widest ranges of any industrial lifting chain system on the market. Anyone given the choice, would automatically opt for the Pewag lifting chain sling system by answering two questions:

Which chain sling system is the most versatile? Which chain sling system is easier to use and inspect?

That being said, we can also provide the Linx-8 Grade 8 and the new Grade 12 chain systems. Plus complete slings or spare parts for all leading makes including: Kuplex, Gunnebo and Wm. Hackett.



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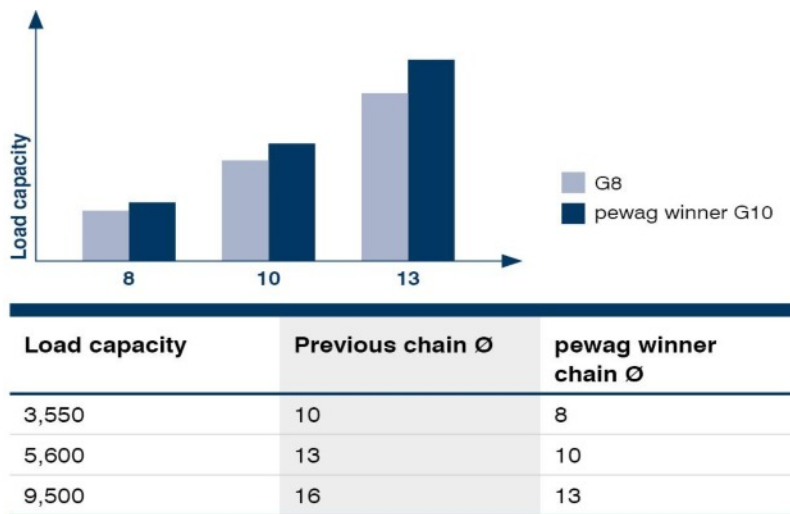
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Sling Loadings

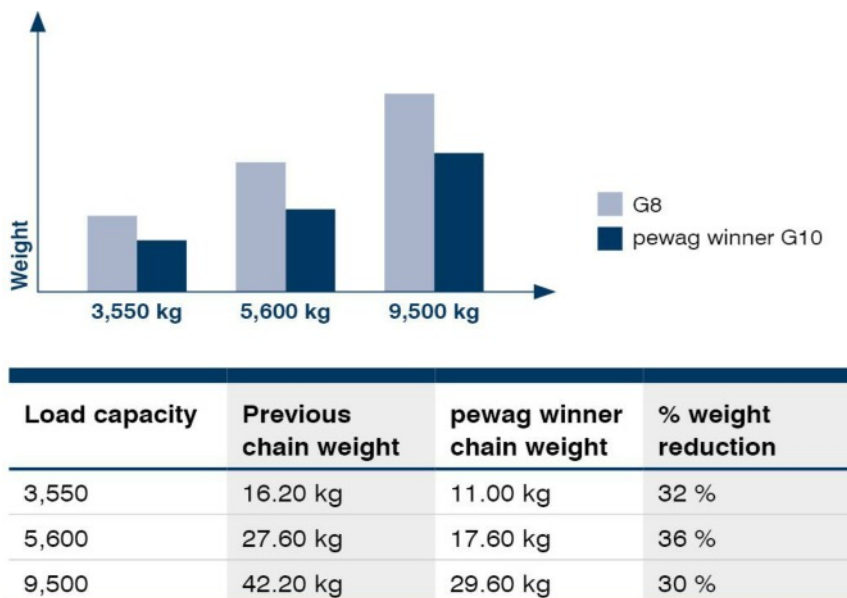
There are many chain sizes and an extensive selection of components available in the Pewag Grade 10. This enables the specifier or user of industrial lifting slings made from alloy chain a wide choice of load capacities.

Grade 10 Benefits

25 % higher load capacity compared to G8 (graph based on 2 leg slings)



Easier handling due to a 30 % weight reduction (graph based on 2 leg slings)



For more information on loadings, please refer to our online brochures [Click Here](#)



Identification

Alloy steel chain and components carry a grade mark. E.g. For Grade 10 this is at 300 mm intervals along the chain. Components have an embossed grade mark and manufacturers name or mark and batch identification number.



- Batch code on chain and components ensures traceability of all manufacturing data.
- High visibility orange powder coating for instant visual identification Largest range of components in special grade 10 quality for 11 chain dimensions.
- A metal chain tag with grade, chain size and angle rated working load limit is attached to all chain slings supplied.



- CE marked
- Supplied with EC Declaration of Conformity
- Assembled in the UK by our trained technicians

Certification



Standards that govern the manufacture of chain and components require that either that the final assembly or all the individual components used in the manufacture of chain slings must be proof tested and certified.



As assemblers and repairers of complete chain slings and components we provide a Declaration of Conformity to these standards and or a Report of a Thorough Examination.



Chain Sling Configurations



Single Leg Chain Sling

A length of chain with fittings on each end used for lifting in a vertical hitch. This sling chain can be combined with unlimited fittings to suit your application.

Double Leg Chain Sling

Two single leg chain slings joined by an oblong at the top. This lifting chain is rated for both legs to be used simultaneously at a 45 or 60 degree angle.

3 Leg Chain Sling

Three single leg chain slings joined by a special oblong sub-assembly at the top of the lifting chains. Rated for lifting when legs are at a 45 or 60 degree angles from the object.

4 Leg Chain Sling

Four single leg chain sling assemblies joined by a sub-assembly at the top of the rigging chain. Rated to lift using all 4 legs at 45 or 60 degree angles.



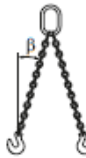
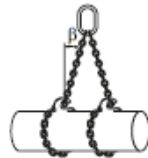

Grade 10 Features:

- 25% higher WLL than Grade 8
- Chain sizes from 5 mm to 32 mm diameter
- Sling lifting capacities of up to 85 tonnes
- Wide range of terminal fitting options



Grade 8 and Grade 10 Chain Sling System Capacities

The load capacities listed are maximum values of the various sling types, stated according to the standard (Uniform Load) method of rating.

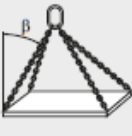




Safety factor 4		I-leg chains		II-leg chains				III- + IV-leg chains
								
Angle of inclination β	-	-	$0^\circ - 45^\circ$	$45^\circ - 60^\circ$	$0^\circ - 45^\circ$	$45^\circ - 60^\circ$	$0^\circ - 45^\circ$	
Load factor	1	0.8	1.4	1	1.12	0.8	2.1	
Code	d	Load capacity [kg]						
WIN 5	5	1,000	800	1,400	1,000	1,120	800	2,000
Ni 5 G8	5	800	640	1,120	800	900	640	1,600
WIN 6	6	1,400	1,120	2,000	1,400	1,600	1,120	3,000
Ni 6 G8	6	1,120	900	1,600	1,120	1,250	900	2,360
WIN 7	7	1,900	1,500	2,650	1,900	2,120	1,500	4,000
Ni 7 G8	7	1,500	1,200	2,120	1,500	1,700	1,200	3,150
WIN 8	8	2,500	2,000	3,550	2,500	2,800	2,000	5,300
Ni 8 G8	8	2,000	1,600	2,800	2,000	2,240	1,600	4,250
WIN 10	10	4,000	3,150	5,600	4,000	4,250	3,150	8,000
Ni 10 G8	10	3,150	2,500	4,250	3,150	3,550	2,500	6,700
WIN 13	13	6,700	5,300	9,500	6,700	7,500	5,300	14,000
Ni 13 G8	13	5,300	4,250	7,500	5,300	5,900	4,250	11,200
WIN 16	16	10,000	8,000	14,000	10,000	11,200	8,000	21,200
Ni 16 G8	16	8,000	6,300	11,200	8,000	9,000	6,300	17,000
WIN 19	19	14,000	11,200	20,000	14,000	16,000	11,200	30,000
Ni 19 G8	19	11,200	8,950	16,000	11,200	12,500	8,950	23,600
WIN 22	22	19,000	15,000	26,500	19,000	21,200	15,000	40,000
Ni 22 G8	22	15,000	12,000	21,200	15,000	17,000	12,000	31,500
WIN 26	26	26,500	21,200	37,500	26,500	30,000	21,200	56,000
Ni 26 G8	26	21,200	16,950	30,000	21,200	23,700	16,950	45,000
WIN 32	32	40,000	31,500	56,000	40,000	45,000	31,500	85,000
Ni 32 G8	32	31,500	25,200	45,000	31,500	35,200	25,200	67,000

If the chain slings are used in severe conditions (e.g. high temperature, asymmetric load distribution, edge load, impact/shock loads), the maximum load capacity values in the table must be reduced by the load factors specified on page 20.

Please also note the user information on different conditions of use and their effects on the load capacity values!



Grade 8 and Grade 10 Chain Sling System Capacities

III- + IV- leg chains	IV- leg chains with load distributor		Endless chain sling	Single lifting sling		Double lifting sling	
							
45° – 60°	0° – 45°	45° – 60°	-	0° – 45°	45° – 60°	0° – 45°	45° – 60°
1.5	2.8	2	1.6	1.4	1	2.1	1.5
1,500	2,800	2,000	1,600	1,400	1,000	2,000	1,500
1,180	2,240	1,600	1,250	1,120	800	1,600	1,180
2,120	4,000	2,800	2,240	2,000	1,400	3,000	2,120
1,700	3,150	2,240	1,800	1,600	1,120	2,360	1,700
2,800	5,300	3,750	3,000	2,650	1,900	4,000	2,800
2,240	4,000	3,000	2,500	2,120	1,500	3,150	2,240
3,750	7,100	5,000	4,000	3,550	2,500	5,300	3,750
3,000	5,600	4,000	3,150	2,800	2,000	4,250	3,000
6,000	11,200	8,000	6,300	5,600	4,000	8,000	6,000
4,750	8,500	6,300	5,000	4,250	3,150	6,700	4,750
10,000	19,000	13,200	10,600	9,500	6,700	14,000	10,000
8,000	14,000	10,600	8,500	7,500	5,300	11,200	8,000
15,000	28,000	20,000	16,000	14,000	10,000	21,200	15,000
11,800	22,400	16,000	12,500	11,200	8,000	17,000	11,800
21,200	39,200	28,000	22,400	20,000	14,000	30,000	21,200
17,000	-	-	18,000	16,000	11,200	23,600	17,000
28,000	53,200	38,000	30,000	26,500	19,000	40,000	28,000
22,400	-	-	23,600	21,200	15,000	31,500	22,400
40,000	74,200	53,000	42,500	37,500	26,500	56,000	40,000
31,500	-	-	33,500	30,000	21,200	45,000	31,500
60,000	-	-	63,000	56,000	40,000	85,000	60,000
47,500	-	-	50,000	45,000	31,500	67,000	47,500




For more chain sling configurations contact our sales team to discuss your exact requirements



Exceptional conditions of use

Even the highest-quality products will lose some of their load capacity if used at high temperatures, as a consequence of asymmetric load distribution, edge loading, shock/impact loading or other exceptional conditions of use. Please consult the user information for details.

The following circumstances are considered exceptional conditions of use as outlined above:

Temperature	-40 °C – 200 °C	above 200 °C – 300 °C	above 300 °C – 380 °C
Load factor pewag winner 200	1	not permissible	not permissible
Load factor pewag winner 400	1	0.9	0.75
Asymmetric load distribution	The WLL has to be reduced by at least 1 leg. In case of doubt only consider 1 leg as load-bearing.		
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 = dia. of chain

Sample order text for pewag winner sling types

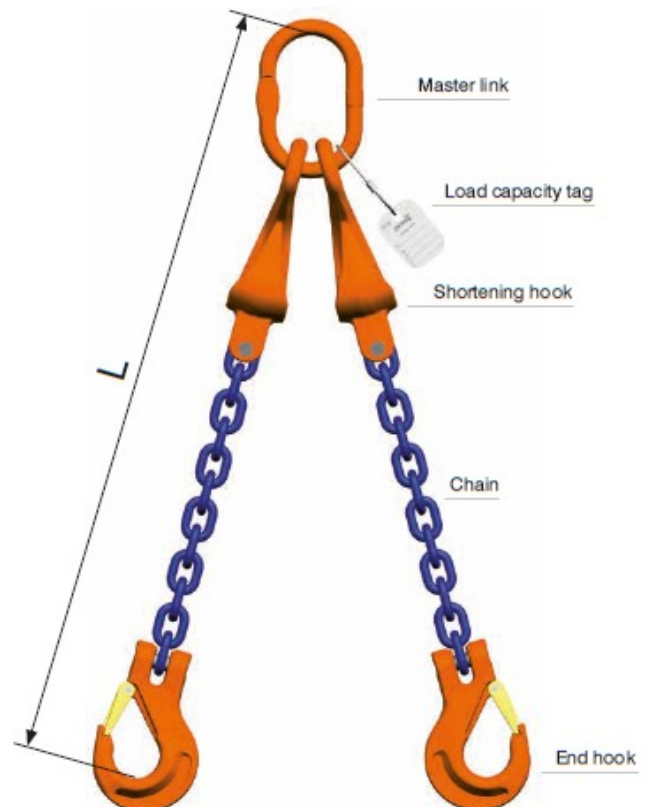
Here you will find some examples that show what an order of a fully assembled and commercially available pewag winner G10 chain system could look like, clearly labelled and with all components and measurements.

What you see here is a pewag winner 400 II-leg chain sling, 13 mm, with shortening device and hook. Length: 3000 mm.

Clevis system:

WIN 13 400 II VXKW – KHSW 3000

Nominal diameter	Short designation	Number of legs	Master link	End hook	Length [mm]
13	400 II	2	VXKW	KHSW	3000

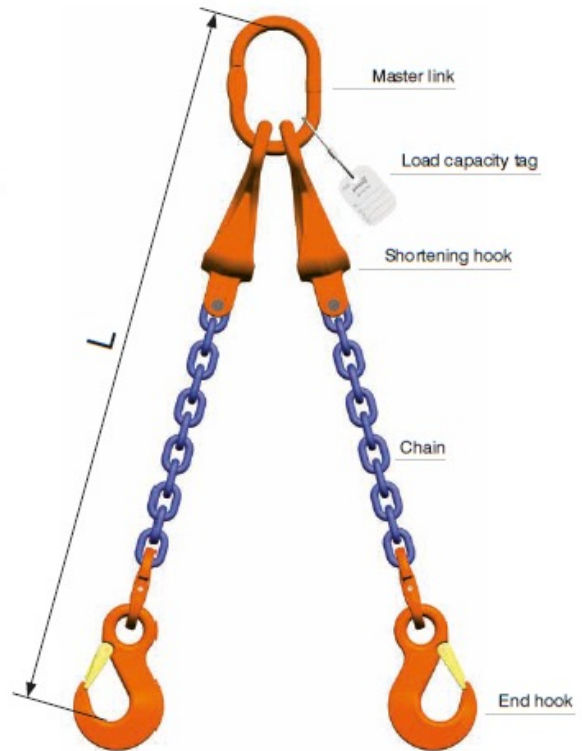


Sample order text

Connex System:

WIN 13 400 II VXKW – HSW 3000 Connex

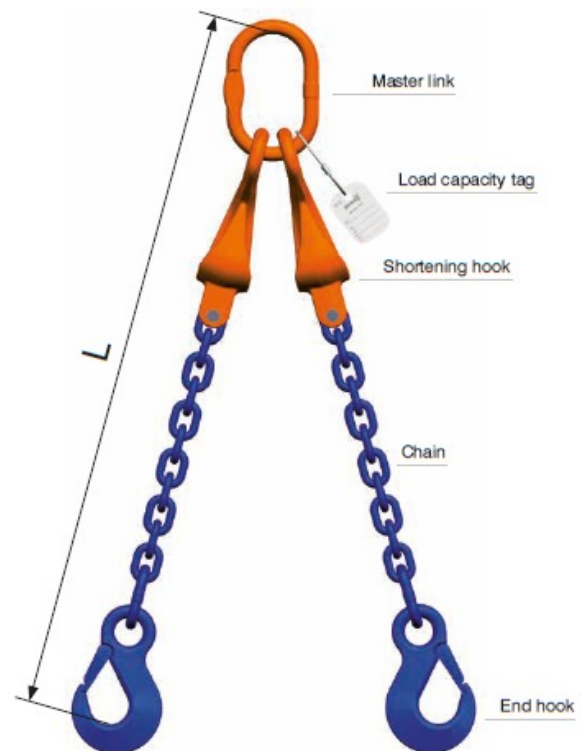
Nominal diameter	Short designation	Number of legs	Master link	End hook	Length [mm]
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Welded system:

WIN 13 400 II VXKW – HSW 3000

Nominal diameter	Short designation	Number of legs	Master link	End hook	Length [mm]
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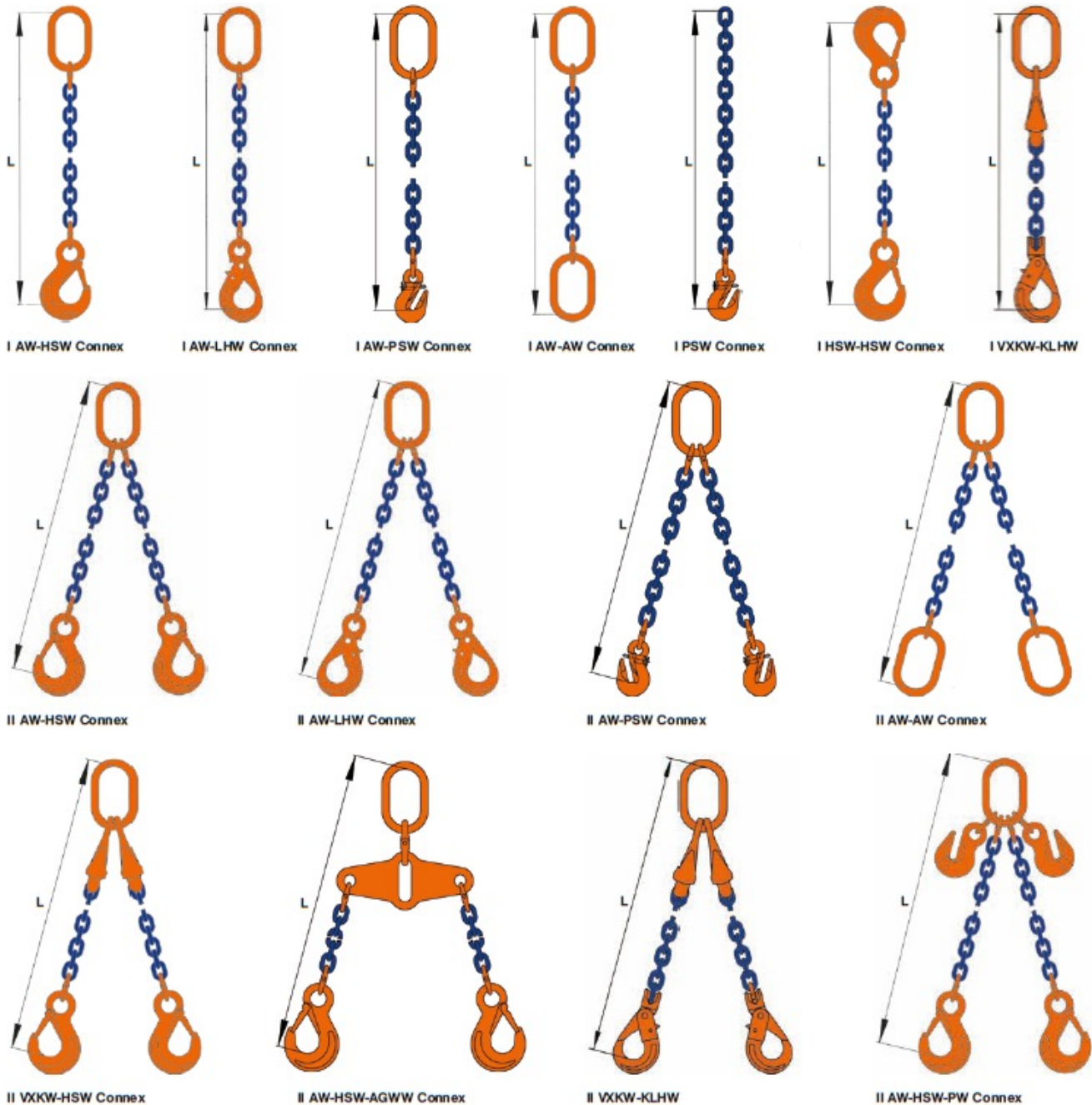
pewag winner standard sling types – perfect in the original!

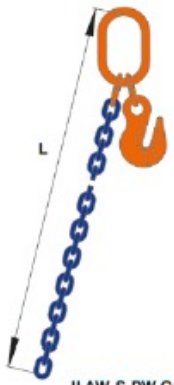
User reliability also comes first for those elements used as lifting components in our standard slings. To a large extent, these can also be manufactured and supplied in other assembly systems to the ones shown here.

If you require a sling type that is not listed here, please submit a small sketch indicating the required type.

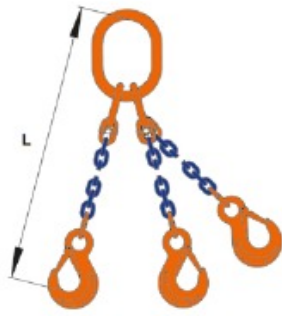
Important: Especially if you handle the assembly yourself, make sure that only pewag winner original parts are used! The usual tolerance of length "L" is +2 chain pitches.

The sling designation system is the same as that of G8. The additional "W" in the code of the individual parts points to the higher quality grade.

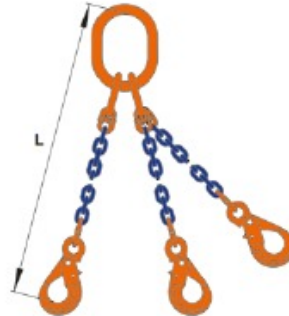




II AW-S-PW Connex



III VW-HSW Connex



III VW-LHW Connex



III VW-PSW Connex



III VW-AW Connex



IV VXKW-HSW Connex



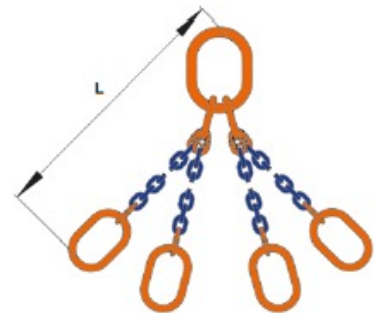
IV VW-HSW-AGWW Connex



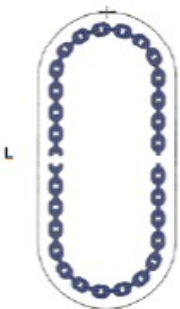
IV VXKW-KLHW



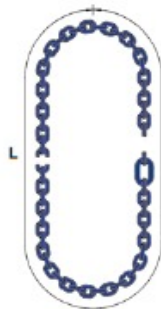
IV VW-HSW Connex



IV VW-AW Connex



S



SK (up from dimension 8!)



II AW-S Connex



IV VW-S Connex





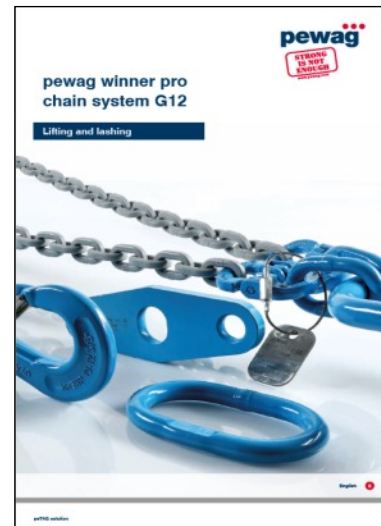
Brochures



[Grade 8](#)

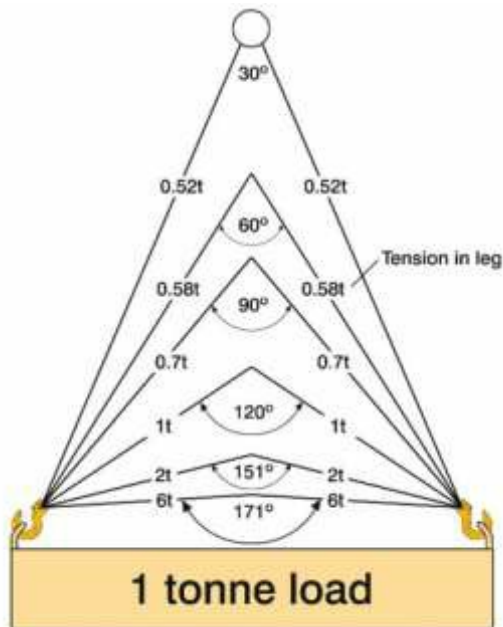


[Grade 10](#)



[Grade 12](#)

Safety in-use



It is important to stress that if improperly used, chain slings can be damaged and can fail resulting in injury, death and/or property damage. It is extremely important that sling users are trained in proper use and inspection techniques.

We offer training opportunities at our Learning Centre in Manchester and encourage all sling users to read and understand the warnings that accompany all our lifting gear, hoisting equipment and/or industrial lifting slings.

As members of the Lifting Equipment Engineers Association (LEEA) we provide the LEEA **Safe Use Instructions**:



The LEEA Slings Pocket Guide is an inexpensive and valuable resource for all users of lifting equipment.

Contact our sales staff to order...



Chain Sling Pricing

Call our sales staff and we will provide you with the specification and prices for your Chain sling requirements.

Our chain slings are custom made to meet your specifications, therefore all chain slings are non-returnable (Except damages in transit).

Repairs

And please don't forget we can also undertake LOLER inspections and or cleaning and repairs of your existing chain slings. Contact our sales team to arrange.

Before



After



All part of the service...

Contact Us

DALE

Lifting and Handling Specialists
2 Kelbrook Road, off Stainburn Road
Parkhouse Street Industrial Estate
Manchester M11 2QA
t. 0161 223 1990
f. 0161 223 6767
e. info@dale-lifting.co.uk
w. www.dlhone.com