pewag

STRONG IS NOT ENOUGH
www.pewag.com

pewag winner inox stainless steel chain system G6 plus

Ideas and solutions in stainless steel

English E

Hardened shell – intelligent core

peTAG solution

Watch out!
More about the intelligent core
on pages 10 and 11.

Content

pewag winner inox stainless steel chain system G6 plus.

Businesses and end-users the world over need high-grade, stainless steel lifting equipment. pewag delivers quality that goes far beyond the standards of the market. We put our hearts and our minds into developing new products. Our love of detail really comes into its own when we are talking about stainless steel – and when it comes to technical expertise, we are certainly not rusty!

LEEA Full Member

Welcome to the pewag group

We are an internationally operating group of companies. Our track record goes back to the year 1479.

Mission Statement

pewag group's Mission Statement expresses the goals of our actions as follows:

With our joy for innovation, we strive to make all products of the pewag group the best in the respective markets. The high quality of our products and services as well as our employees' passionate dedication are the foundation to our pursuit of outstanding services and complete customer satisfaction.

Principles of pewag group

Leading in Quality

The values of our product brands are demonstrated by our first-class quality and innovations and are communicated consistently and coherently.

We anticipate market demands and changes in the environment and adapt our strategies, organizations and actions accordingly to satisfy our customers' needs through providing an optimal price-performance ratio: timely delivery, efficient and obliging service.

Leading in Responsibility

We commit ourselves to careful treatment of the environment, by reducing the use of energy and raw materials, ensuring the longevity of our products and making them recyclable.

We value an open, honest and team-oriented work-style, which is based on transparent communication honoring ideas, opinions and experience of our employees as valuable inputs for our decision making process.

We strive for stable and fair partnerships with our employees, customers, suppliers and other business partners and take social aspects into consideration when making business decisions.

Leading in Technology

We secure our technological strength by striving for product quality, constant improvements and innovations of products, as well as manufacturing processes.

We strive to be the best in product technology. This ensures that our customers always have optimal solutions available and that we expand and protect our market position.

Leading in Economics

In all our processes we use due diligent business practices and efficiency and strive to improve these continuously.

In the long-term, we will continuously increase our economic performance to raise corporate value, achieve sustained growth and thus secure a successful future of the organization.

We are a modern group of companies which looks back to a tradition and experience of more than 500 years. Since our founding years, a lot has changed, but the values that made our success possible from the beginning remain.

pewag group –
Innovation. Quality. Partnership.

History of the pewag group

Advantage through tradition

The history of pewag group goes back to the 15th century and therefore makes us one of the oldest chain manufacturer worldwide. With our experience we are ready for the future.

Timetable of important events

1479 First documented references of a forging plant in Brückl
1787 Foundation of a chain forge in Kapfenberg
1803 Foundation of a chain forge in Graz
1836 Establishment of an iron casting plant in Brückl
1912 Production of the first pewag snow chain
1923 Merger of plants in Graz and Kapfenberg – Creation of the name "pewag"
1972 Foundation of a sales company in Germany
1975 Foundation of a sales company in the USA
1993 Foundation of pewag austria GmbH
1994 Foundation of the first subsidiary in Czech Republic
1999 Acquisition of the Weissenfels Group
2003 Separation from the Weissenfels Group
2005 Reorganization into 2 groups: Schneeketten Beteiligungs AG Group – Snow Chains pewag austria GmbH Group – Technical Chains
2009 Acquisition of Chaineries Limousines S.A.S.
2012 Foundation of the first manufacturing company in the USA
2013/2014 Foundation of various international sales companies

Lithography forging plant Brückl 1855

Anchor chain forge 1878

Chain forgers 1956

Quality management

Our main goal is customer satisfaction.

In this instance, quality means that only those products and services are developed, manufactured and delivered which completely and without compromise satisfy the customer.

The pewag group's quality policy, is underlined by the following basic principle: **"we supply high-end products and services to our customers that conform to the technical standards and requirements"**, can be summarised in the subsequent four points.

Market-oriented Quality
In order to maintain and to widen the competitive position of the pewag group, the quality of finished goods and services must be consistent with the specifications of the customer and also with their expectations of one of the leading companies. No product should ever pose a danger to people or the environment.

Economic Quality
As a profit-oriented company, quality is achieved by taking into consideration the material, personnel and financial resources; this means that we establish an appropriate best price/performance ratio for the customer within the acknowledged framework.

Quality Responsibility
Stringent demands are placed on all employees to ensure high standards of quality. No matter what hierarchical level, all managers are in charge of managing quality. Every employee within the pewag group should be educated, motivated and instructed by the management team. It is important for promoting high quality awareness that the education and training of employees is at the forefront, as each employee is responsible for the quality of his/her own work.

For each of our employees, the statement **"QUALITY STARTS WITH ME"** must be true!

Process-oriented Quality
The close interaction between sales, product development, production and customer service is regulated within the individual companies by fixed processes and activities, as well as responsibilities with the aim to reach and maintain the defined quality standards.

Business areas

Working with pewag products

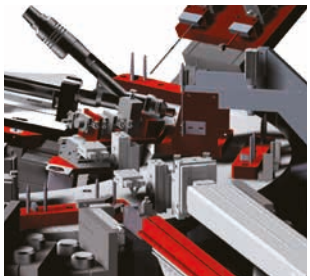
The pewag group has a substantial and diverse spectrum of products and services.

Our range of products varies from traction chains for tires (snow chains for passenger cars, trucks and special-purpose vehicles, tire protection chains for mining vehicles) over different industrial chains to products for the do-it-yourself sector (light chains, belts, etc.)

Segment A
Snow and forestry chains

Segment B
Hoist and conveyor chains

Segment C
Do-it-yourself



Segment D
Engineering

Segment F
Lifting and lashing chains and accessories

Segment G
Tire protection chains

Environment – we take responsibility

Ecological awareness in all areas

Our company's manufacturing location in Kapfenberg, Austria, has been used for iron and steel production for over 270 years. A second facility located in Brückl, Austria, was first documented in records dating back to 1479. Based on this long manufacturing tradition, we take serious responsibility for our products, employees and the environment at all our international locations. Hence, one of our major concerns is to improve energy efficiency and, in doing so, to minimise energy consumption over a long period of time with the development of new production technologies. An important goal is to increase energy efficiency and consequently lower energy demand. Consequently, we develop our products to achieve longer product life-cycles and lower weight but simultaneously, increasing their working load capacities and the safety for our customers. We are committed to upholding all relevant energy and environmental standards by setting clearly defined goals and continually improving our performance. To achieve this goal, we use modern manufacturing technologies. An important step is to provide the necessary resources and to include our employees in the process. We are convinced that well-informed and motivated employees can actively participate in environmental conservation.

Wherever we are unable to avoid an environmental impact, we have set ourselves the goal to continually reduce our energy consumption, waste and environmentally harmful emissions. When purchasing new equipment, we strive to find the best and most efficient technical solution possible. It is important for us to promote the purchase of energy efficient products and services.

Our process-oriented management system regulates the documentation concerning all environmental relevant procedures. It also encompasses preventative measures for possible failures, as well as behavioural instructions for regular and/or extraordinary operational procedures. By systematically monitoring and assessing our environmental activities, we are quickly able to resolve deviances and to take corrective action. This process extends throughout the whole organisation to optimise all business processes. We strive to engage in an open dialogue with our customers, neighbours and authorities to inform them of our energy and environmental engagements.

Through specific communication we want to inform our customers about the environmental aspects of our products – specifically inform them about the longevity of our products. Through meaningful communication, we strive to motivate our suppliers and customers to think – in turn – about their environmental footprint and to put into practice similar environmental standards in their businesses.

Customer proximity

International presence

In the ambitious five-hundred year history pewag has evolved from a small and modest company to a global organization with several subgroups.

With 12 production and 40 sales and other locations on all five continents, pewag documented its claim as one of the world's leading chain manufacturers.

In addition to the numerous locations pewag as an international company relies on his capillary, strong, and professional partner network. These collaborations provide optimal customer service in currently more than 100 countries around the world.

Production and sales locations

Europe	
Austria	pewag austria GmbH, Graz pewag austria GmbH, Kapfenberg pewag Schneeketten GmbH, Graz pewag Schneeketten GmbH, Brückl pewag engineering GmbH, Kapfenberg pewag austria Vertriebsgesellschaft mbH, Graz pewag Ketten GmbH, Klagenfurt pewag International GmbH, Klagenfurt
Germany	pewag Deutschland GmbH, Unna pewag Schneeketten Deutschland GmbH, Unna
France	pewag france SAS, Echirolles / Grenoble Chaineries Limousines SAS, Bellac
Italy	pewag italia srl, Andrian
Croatia	pewag d.o.o, Rijeka
The Netherlands	pewag nederland BV, Rijnsburg APEX International BV, Hillegom APEX Automotive BV, Hillegom
Poland	pewag polska Sp z.o.o., Buczkowice
Portugal	pewag Portugal – Comercio de Produtos e Eqibamentos Industrials, Lda, Santo Antão do Tojal
Romania	pewag Romania SRL, Sibiu County
Russia	OOO "PEWAG", Moscow
Sweden	pewag sweden AB, Emmaboda
Slovakia	pewag Slovakia sro, Nováky
Czech Republic	pewag Czech sro, Vamberk Řetězárna Česká Třebová sro, Vamberk pewag sro, Vamberk pewag Czech sro, Česká Třebová peform Chrudim sro, Chrudim

Europe	
Ukraine	TOV pewag Ukraine GmbH, Lviv

North America	
USA	pewag Inc, Bolingbrook, Illinois pewag Inc, Rocklin, California pewag Traction Chain Inc, Pueblo, Colorado
Canada	pewag Canada Inc., Mississauga
Mexico	pewag Mexico SA de CV, Mexico

South America	
Brazil	pewag Brasil Comércio de Correntes Ltda., São Paulo
Colombia	pewag Columbia S.A.S, Medellin

Africa	
South Africa	pewag chain south africa (pty) ltd., Rivonia

Australia	
Australia	pewag australia Pty Limited, Barrack Heights

Asia	
India	pewag India Private Limited, Bangalore

pewag group presents
itself on the internet. More ...
www.pewag-group.com
www.pewag.com

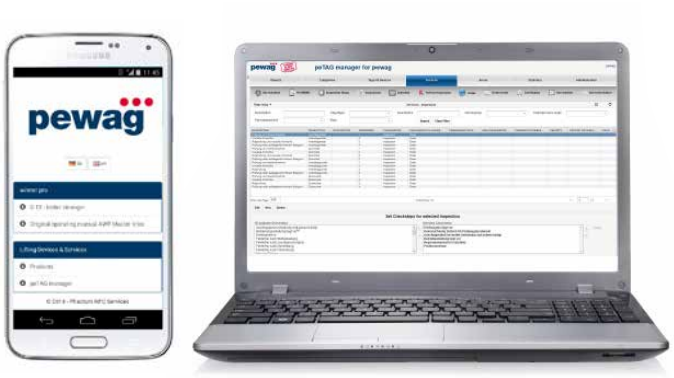
pewag group –
Innovation. Quality. Partnership.

pewag chains together

The peTAG solution enables cross-company, flexible servicing and administration of a wide range of different objects.

peTAG solution

The intelligent solution for unambiguous object identification, data transfer without media breaks, easy servicing of objects, safe document archiving, efficient interaction with partner businesses and much more.



peTAG info

Smart, free-of-charge access to product-specific information via mobile web.

peTAG manager

Watch your PC and mobile devices work hand in hand with this adaptable, high-performance platform – in any work environment and while increasing data quality at the same time. Expensive add-on reading devices and manual data transfer are things of the past!

peTAG solution

peTAG solution Keyfacts

Intelligent software
User-specific adaptation of object data, testing processes and steps. Automates the creation, sending and archiving of test reports. Sophisticated authorisation concept.

Linked-up partnerships
Straightforward exchange and efficient interaction between service providers, merchants and customers. Improved service and data quality. Increased satisfaction and loyalty.

Save time & money
Efficient documentation of work processes, thus simplified daily workflows. Data exchange without media breaks, fault-free data communication.

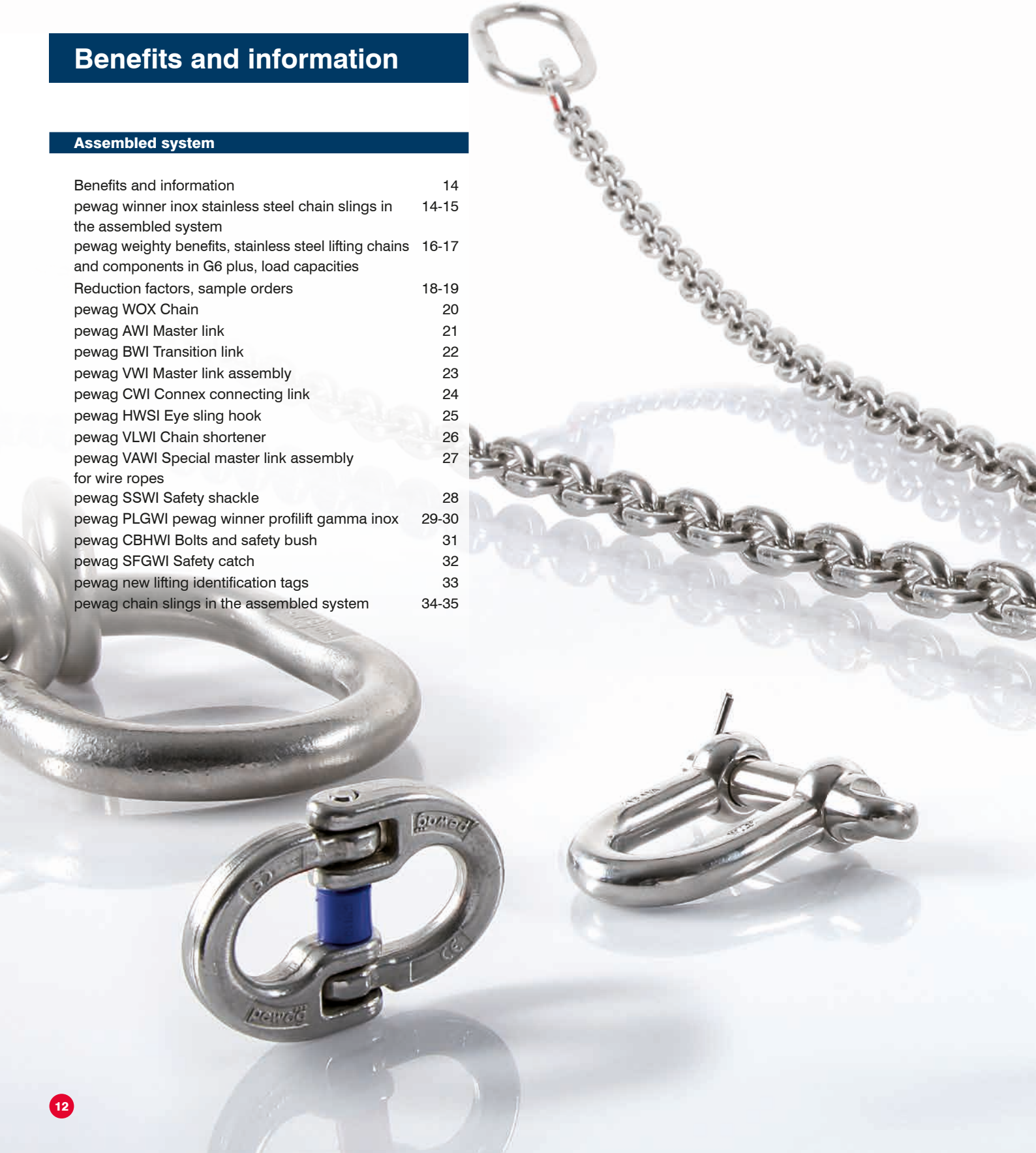
Always up to date
Access to the latest product data and information, overview of all test data, documentation of test procedures. Traceability of object history.

Mobile solution
Direct, location-independent data access (e.g. load capacity, safety information, latest test reports etc.) Smart servicing of objects via mobile app. Offline availability.

Assembled system

Benefits and information

Assembled system




pewag HSWI 13-8
P2AA
CW10.6

Assembled system Benefits and information.

Versatile like no other, sophisticated and with multiple combining options – pewag winner inox.

Nothing is more important than reliable foundations. pewag winner inox stands for a sophisticated and highly successful, exchangeable basic lifting system for stainless steel chains and components that outshines everything else on the market. Practical, comprehensive and incredibly versatile, professionals will find it is easy to assemble. Individual parts may come from any supplier, as long as they have the same quality, grade and tolerance levels, and may be selected, combined and applied at the user's discretion. There is no dependence on a single manufacturer and individual components may be replaced by products from other suppliers.

Seamless linking
But pewag winner inox has another joker up its sleeve: With the CWI Connex connecting link, its multi-functionality really comes into its own in terms of possible combinations and flexibility. Whether Connex links are used in combination with stainless steel chains or wire ropes, eye hooks and master links or Connex links – they are unsurpassed in term of user-friendliness and the unbeatable pewag quality.

pewag winner inox is superior to conventional lifting slings: pewag winner inox can be used in dissimilar corrosive mediums as well as at elevated temperatures – in certain circumstances, even up to a maximum of +700 °C. Truly unique features that will surely melt away any remaining doubts. This is a highly sophisticated system whose chains and components are manufactured on the basis of high-grade steels Mat. 1.4571 (AISI 316 Ti) and 1.4404 (AISI 316 L) as well as 1.4462 (AISI 318 LN). Due to a special manufacturing method, these only contain a limited proportion of carbon.

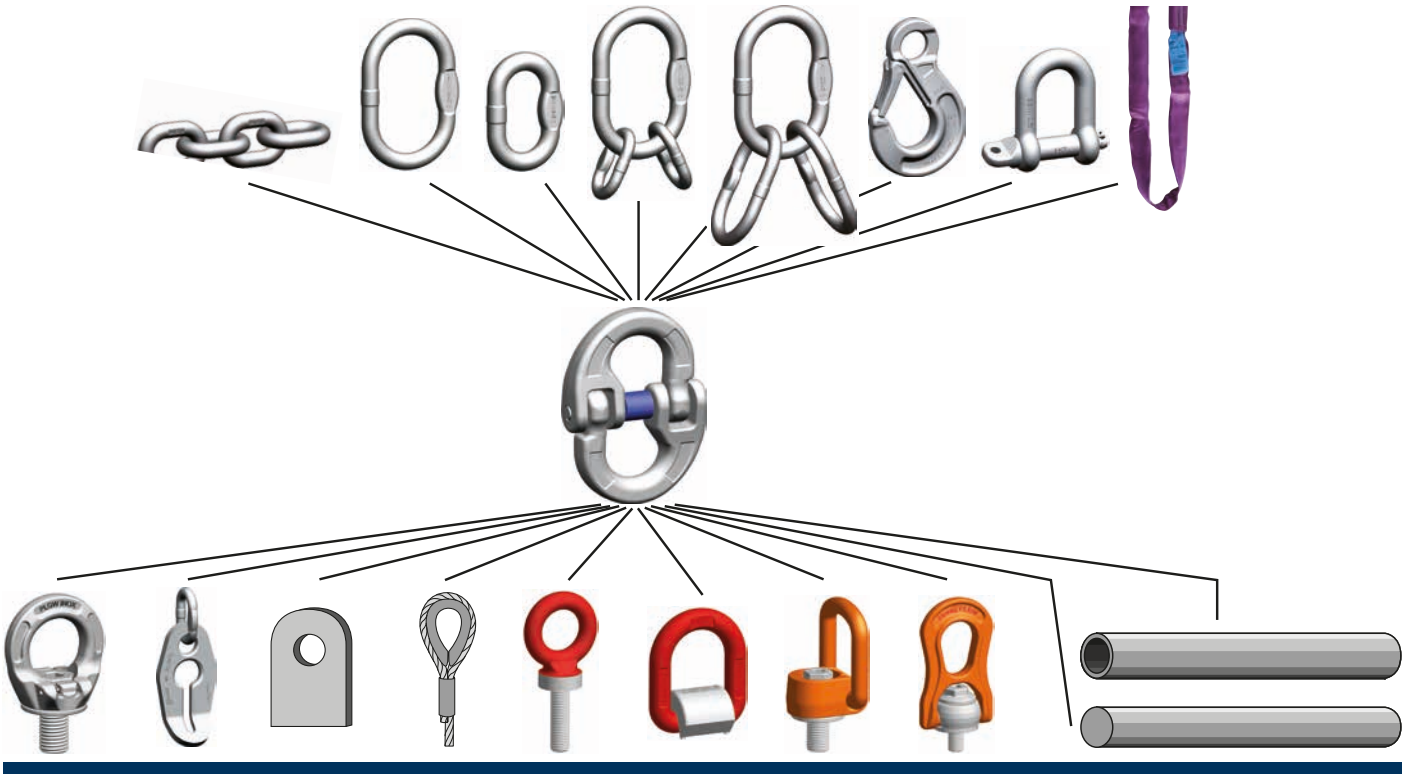
We test the best...
... because that's who we are: The pewag quality management system (ISO 9001) and ongoing controls during the manufacturing process ensure the highest possible level of safety and an extremely long lifespan – correct usage provided, of course. And another thing – pewag never stands still. The pewag winner inox range continues to develop and to adapt to future requirements, so watch this space!

pewag winner inox: Never for the scrap heap!

The CWI Connex connecting links – linking chains and components.

The CWI Connex is not just any connecting link. Indeed, the arguments in its favour are as incorruptible as… well, as steel:

- No special requirements for connecting are needed, for instance flat sections or similar
- Other lifting accessories such as hooks, master links, shortenings etc. can be just as easily integrated
- The two-part design makes for easy connection with eyes or openings or mounting over shafts and tubes
- Easy retrofitting or dismantling
- Due to the large radii of the system, Connex provides plenty of space during the linking process in a wide range of applications
- CWI Connex is also known as the “problem solver” – there are hardly any limits when it comes to combination with other elements



Extremely versatile when it comes to possible combinations: The trademark of the CWI Connex connecting link.

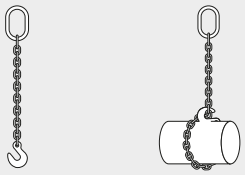
pewag winner inox G6 plus – weighty benefits.

Iron discipline in development and steely principles are the reasons why pewag is not satisfied with being among the global leaders in chain manufacturing. pewag works tirelessly to further enhance its competence in the field of stainless chains for the lifting of loads. This immense effort to stay ahead is also reflected in the grade 6 plus programme, with mechanical values based on a breaking tension of 630 N/mm². This means that we will be offering a complete product range with load capacities from 320 to 12,000 kg in the individual chain strand – quite an achievement!

Special features
Increase in carrying capacity of G6 plus by approx. 25 % with the same nominal diameter as the G5; therefore more lifting capacity with similar weight!

Enhanced load capacities
The working load limits listed are maximum values of the various sling types, stated according to the standard (uniform load) method of rating.
Light grey values correspond to grade 5. True to its name, pewag winner inox G6 plus offers several winning points:

- Eye hooks: Higher lifting capacity compared to G5, despite larger hook mouth and narrower passage on the hook body for better fit in eyelets and lifting points of the new, higher classifications where components become progressively smaller in relation to the load
- The size of the pewag winner inox G6 plus remains the same, despite the higher lifting capacity
- Thanks to larger dimensions in G6 plus, the master links fit well into large crane hooks
- pewag master links are capable of even more: Thanks to their inside width, they may be fitted into crane hooks even for small chain dimensions (from 320 kg)
- The programme extension makes for a load capacity increase to 12 tonnes and for pump chains from 320 up to a remarkable 12,000 kg!

Safety factor 4		**I-leg chains**		**II-leg chains**			
1:4							
Angle of inclination		**-**	**-**	**0°-45°**	**45°-60°**	**0°-45°**	**45°-60°**
Load factor		**1**	**0.8**	**1.4**	**1**	**1.12**	**0.8**
Code	**d**	**Load capacity [kg]**					
WOX 4-6	4	400	320	560	400	450	320
WOX 4	4	320	256	450	320	355	256
WOX 5-6	5	630	500	850	630	700	500
WOX 5	5	500	400	700	500	560	400
WOX 6-6	6	900	720	1,250	900	1,000	720
WOX 6	6	750	600	1,000	750	800	600
WOX 7-6	7	1,250	1,000	1,750	1,250	1,400	1,000
WOX 7	7	1,000	800	1,400	1,000	1,120	800
WOX 8-6	8	1,600	1,280	2,200	1,600	1,800	1,280
WOX 8	8	1,250	1,000	1,700	1,250	1,400	1,000
WOX 10-6	10	2,500	2,000	3,500	2,500	2,800	2,000
WOX 10	10	2,000	1,600	2,800	2,000	2,240	1,600
WOX 13-6	13	4,250	3,400	5,950	4,250	4,750	3,400
WOX 13	13	3,200	2,560	4,500	3,200	3,550	2,560
WOX 16-6	16	6,300	5,040	8,800	6,300	7,050	5,040
WOX 16	16	5,000	4,000	7,100	5,000	5,600	4,000
WOX 20-5	20	8,000	6,400	11,200	8,000	-	-
WOX 26-4+	26	12,000	9,600	-	-	-	-

Possible adjustment variations see page 32 resp. 40 at assembled and welded slings.

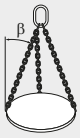
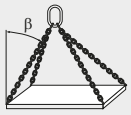
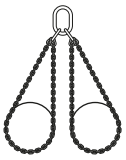
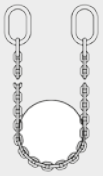
Stainless steel lifting chains and components in G6 plus – we take reliability to a new level!

Absolute reliability when it comes to usage is our top priority also for those elements that are used as links in a long chain of quality products.

Stainless steel lifting chains and components in G6 plus feature a **stress at working load limit** of 160 N/mm², **breaking stress** of 630 N/mm² and a minimum breaking elongation of at least 20 %.

The following materials are used: 1.4571 (AISI 316 Ti), 1.4404 (AISI 316 L) und 1.4462 (AISI F51).
The chain **surface** is brightly polished, the components are pickled and blasted.

The welded chain sling systems and the PCWI stainless steel pump chains are brightly polished.

III- + IV- leg chains		Endless chain sling	Single lifting sling		Double lifting sling		U-Shape
							
0°-45°	45°-60°	-	0°-45°	45°-60°	0°-45°	45°-60°	-
2.1	1.5	1.6	1.4	1	2.1	1.5	2
Load capacity [kg]							
840	600	640	560	400	840	600	800
670	475	512	450	320	670	475	640
1,300	940	1,000	850	630	1,300	940	1,260
1,050	750	800	700	500	1,050	750	1,000
1,850	1,350	1,400	1,250	900	1,850	1,350	1,800
1,600	1,120	1,200	1,000	750	1,600	1,120	1,500
2,600	1,850	2,000	1,750	1,250	2,600	1,850	2,500
2,100	1,500	1,600	1,400	1,000	2,100	1,500	2,500
3,350	2,400	2,500	2,220	1,600	3,350	2,400	3,200
2,650	1,800	2,000	1,700	1,250	2,650	1,800	2,500
5,250	3,750	4,000	3,500	2,500	5,250	3,750	5,000
4,250	3,000	3,200	2,800	2,000	4,250	3,000	4,000
8,900	6,350	6,800	5,950	4,250	8,900	6,350	8,500
6,700	4,750	5,120	4,500	3,200	6,700	4,750	6,400
13,200	9,400	10,000	8,800	6,300	13,200	9,400	12,600
10,000	7,500	8,000	7,100	5,000	10,000	7,500	10,000
-	-	12,800	11,200	8,000	-	-	16,000
-	-	19,200	-	-	-	-	24,000

Reduction factors – all you need to know.

Even top-quality chains will lose some of their load capacity when exposed to high temperatures, asymmetrical load distribution, edge loading, impact/shock loads or other severe conditions. The tables on the two previous pages list the maximum load capacities that must be reduced by the load factors listed below if such conditions apply. Please also refer to the user manual.

If chains are wound around support arms or other round-shaped loads, the diameter should be at least 3x the chain pitch. For smaller diameters, the lifting capacity of the chains must be reduced by 50 %.

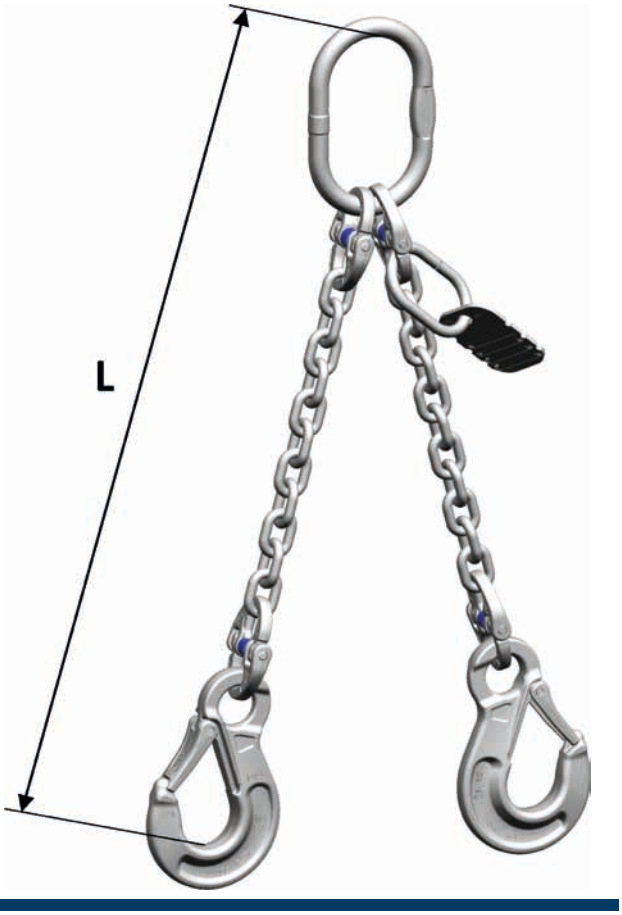
The winner inox chain system G6 plus should not be used with temperatures over 350 °C. If you consider using the system with higher temperatures, please contact our competent service team for advice!

Temperature	-40 °C – 350 °C	-40 °C – 350 °C	above 350 °C
Load factor	1	1	not permissible
Asymmetric load distribution	The WLL has to be reduced by at least I leg. In case of doubt only consider I leg as load-bearing.		
Edge load*	R = larger than 2x 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 = thickness of the material

Sample order for pewag winner inox.

We want to show you a sample order of a fully assembled, standard pewag winner inox chain sling. The sample shows a pewag winner inox 10 mm,
double-leg chain sling with eye sling hook, mounted with a CWI Connex connecting link, in a length of 3,500 mm.



Connex System:

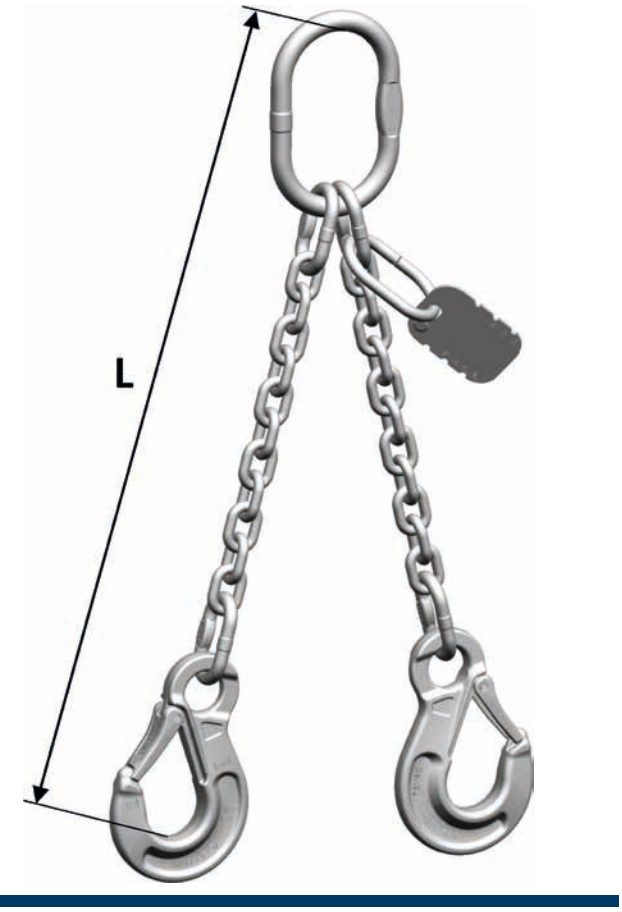
WOX 10-6 II AWI - HSWI 3500 Connex

Nominal diameter		Number of legs	Master link	End hook	Length [mm]	Connex mounted

Welded system:

WOX 10-6 II AWI - HSWI 3500

Nominal diameter		Number of legs	Master link	End hook	Length [mm]

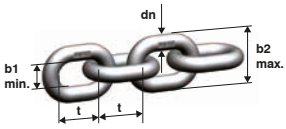


pewag WOX Chain inox

Clean, tidy and hard-working.

This stainless steel lifting chain is made from high-grade stainless steel, with a load capacity that is 25 % higher than that of G5 lifting chains. The chains are tested at 100 % of their load capacity, which is an impressive 12,000 kg! The chain is electrically welded for an extra-clean finish, stamped and with a higher resistance to acids and caustics than the standard lifting chains G8, G10 and G12. The chain is guaranteed to be compatible with the Connex CWI links, with dimensions that are similar to DIN 5687-1 and EN 818-2. The stamp makes the chains clearly identifiable.

The WOX chain is particularly suited for use in water and wastewater applications. It can also be used in connection with chemicals and food products; however, restrictions will apply.



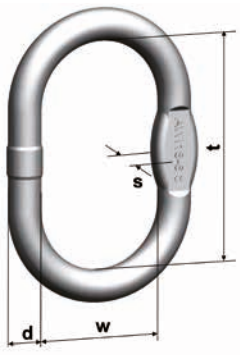
WOX Chain inox	Code	Nominal diameter dn [mm]	Standard delivery length [m]	Pitch t [mm]	Inside width b1 min. [mm]	Outside width b2 max. [mm]	Load capacity [kg]	Breaking force [kN]	Weight [kg/m]
	WOX 4-6	4	50	12	5.80	14.80	400	16	0.40
	WOX 5-6	5	50	15.10	7.50	18.50	630	25	0.61
	WOX 6-6	6	50	18	8	21.50	900	37.50	0.88
	WOX 7-6	7	50	21	9.50	25.20	1,250	50	1.19
	WOX 8-6	8	50	24	10.80	28.60	1,600	63	1.53
	WOX 10-6	10	50	30	13.50	36	2,500	100	2.40
	WOX 13-6	13	25	39	17.50	46.80	4,250	170	4.05
	WOX 16-6	16	25	48	21.50	57.60	6,300	250	6.00
	WOX 20-5	20	-	60	27	72	8,000	314	9.29
	WOX 26-4+	26	-	78	35	93.60	12,000	471	16.20

pewag AWI Master link

Doubles up as a dependable end link.

High-grade stainless steel yields a result that outshines the rest: This stainless master link is electrically welded for a clean finish, stamped and suitable for both I- and II-leg assemblies and wire rope slings (similar to DIN 3088- 1989). The master link may also be used in VWI four-leg assemblies and as an end link.
Its dimensions are similar to DIN 5688-1 and it is tested at 100 % of its load capacity. A particular bonus is the higher resistance to acids and caustics compared to the standard loading rings G8, G10 and G12. The stamp makes the master link clearly identifiable. The master link also bears the CE mark.

The AWI Master link is particularly suited for use in water and wastewater applications. It can also be used in connection with chemicals and food products; however, restrictions will apply.



AWI Master link	Code	Load capacity 0°-45° [kg]	Can be used up to single hook according to DIN 15401 no.	d [mm]	t [mm]	w [mm]	s [mm]	Weight [kg/pc.]	For 1-leg slings	For 2-leg slings
	AWI 8-6	560	0.5	8	60	35	-	0.08	4	4
	AWI 10-6	850	1.6	10	80	50	-	0.16	5	5
	AWI 13-6	1,600	2.5	13	110	60	10	0.34	6/7/8	6
	AWI 16-6	2,600	2.5	16	110	60	14	0.53	10	7/8
	AWI 18-6	3,500	5	18	135	75	14	0.83	-	10
	AWI 22-6	6,300	6	23	160	90	17	1.55	13/16	13
	AWI 26-6	8,900	8	27	180	100	20	2.46	20	16
	AWI 32-6	13,200	10	32	200	110	26	3.86	-	20
	AWI 36-6	14,700	16	36	260	140	29	6.22	-	-
	AWI 45	12,000	25	45	340	180	-	12.82	26	-

Custom-made, also with flattening available.

pewag BWI Transition link

Electrically welded for an extra-clean finish.

A higher resistance to acids and caustics compared to the standard transition links G8, G10 and G12 is just one of the many benefits that make this stamped transition link truly remarkable. The use of high-grade stainless steel also ensures that this electrically welded transition and securing link will never rust.

The stamp and the CE mark ensure that the product is clearly identifiable. The transition link is part of welded assemblies, may also be used as an end link and is tested at 100 % of its maximum load capacity. Its dimensions are similar to DIN 5688-1.

The outstanding quality of this transition link is also reflected in its wide range of possible applications: It may be used as a connecting link for assembling I- to IV-leg assemblies in welded systems as well as an end link. In addition, it is ideally suited for use in water and wastewater applications and can also be used in connection with chemicals and food products; however, restrictions will apply.

BWI Transition link	Code	Load capacity 0°-45° [kg]	d [mm]	t [mm]	w [mm]	s [mm]	Weight [kg/pc.]	For 1-leg slings	For 2-leg slings
	BWI 7-6	900	7	36	16	-	0.04	5/6	5/6
	BWI 9-6	1,250	9	44	20	-	0.07	7	7
	BWI 10-6	1,600	10	44	20	-	0.09	8	8
	BWI 13-6	2,500	13	54	25	10	0.18	10	10
	BWI 16-6	4,250	16	70	34	14	0.35	13	13
	BWI 20-6	6,300	20	85	40	16	0.67	16	16
	BWI 22-6	8,000	23	115	50	17	1.16	20	-
	BWI 26-6	10,070	27	140	65	20	1.92	-	-
	BWI 32-6	12,000	32	150	70	26	3.18	26	-

Custom-made, also with flattening available.

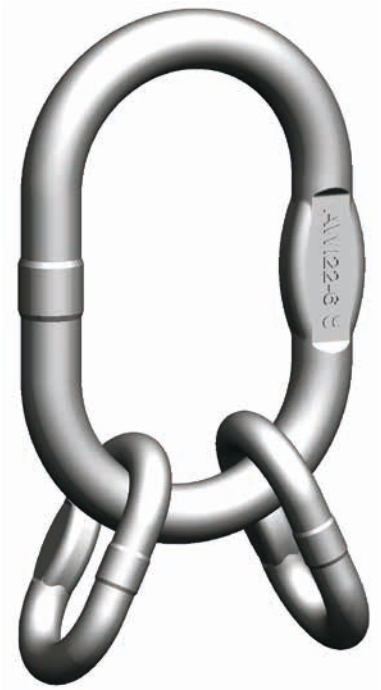
pewag VWI Master link assembly

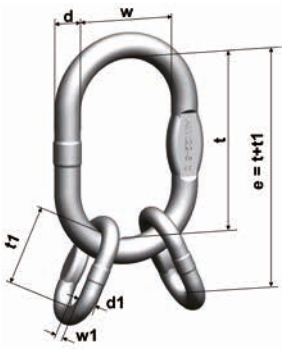
Consistent performance.

This stainless steel chain sling is electrically welded for a clean finish, stamped and ideally suited for assembling III- and IV-leg chain slings in welded or assembled systems. The dimensions are similar to DIN 5688-1.

The VWI Master link assembly is tested at 100 % of its load capacity. It is made from high-grade stainless steel with a higher resistance to acids and caustics than the standard four-leg chain slings G8, G10 and G12.

It is ideally suited for use in water and wastewater applications and can also be used in connection with chemicals and food products; however, restrictions will apply. The stamp and the CE mark ensure that the product is clearly identifiable.





VWI Master link assembly	Code	Consisting of	Can be used up to single hook according to DIN 15401 no.	Load capacity 0°-45° [kg]	Weight [kg/pc.]
	VWI 4-6	AWI 10-6 + 2 BWI 9-6	1.6	840	0.28
	VWI 5-6	AWI 13-6 + 2 BWI 10-6	2.5	1,300	0.52
	VWI 6/7-6	AWI 16-6 + 2 BWI 13-6	2.5	2,600	0.91
	VWI 8-6	AWI 18-6 + 2 BWI 16-6	5	3,350	1.64
	VWI 10-6	AWI 22-6 + 2 BWI 20-6	6	5,250	3.02
	VWI 13-6	AWI 26-6 + 2 BWI 22-6	8	8,900	4.78
	VWI 16-6	AWI 32-6 + 2 BWI 26-6	10	13,200	7.98

Code	e [mm]	d [mm]	t [mm]	w [mm]	d1 [mm]	t1 [mm]	w1 [mm]
VWI 4-6	124	10	80	50	9	44	20
VWI 5-6	154	13	110	60	10	44	20
VWI 6/7-6	164	16	110	60	13	54	25
VWI 8-6	205	18	135	75	16	70	34
VWI 10-6	245	23	160	90	20	85	40
VWI 13-6	295	27	180	100	23	115	50
VWI 16-6	340	32	200	110	27	140	65

Custom-made, also with flattening available. Number close to code constitutes chain, used in combination with product.

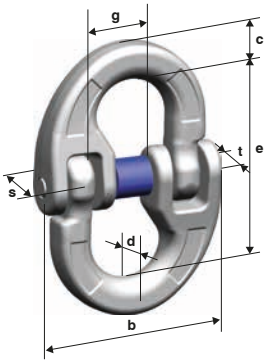
pewag CWI Connex connecting link

For a seamless connection.

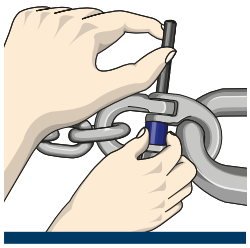
This stainless steel connecting link is drop-forged and stamped and consists of two symmetrical halves made from high-grade stainless steel. Its labour-intensive manufacturing process gives the product its outstanding quality. The connecting link may be divided and used for the universal assembly of chain slings, master links, master link assemblies, shortenings, shackles and other accessories and is guaranteed to be compatible with all pewag winner inox components of the same nominal size. The suspension bolt is locked by a stainless steel coil spring (mat. 1.4462) with a synthetic leeve. The bolt and the shell are available as spare parts.

The manufacturing process of the CWI Connex connecting link is similar to EN 1677-1. The product is suitable for straight pulling only; the simultaneous application of loads by two or more legs must be avoided. After the universally usable connecting link has been assembled and disassembled three times, it is recommended to use a new bolt and a new shell, to be mounted securely by a professional, to ensure that the quality of the product remains unimpaired. CBHWI spare part sets are available.

It is resistant to sea water and ideally suited for use in water and wastewater applications and can also be used in connection with chemicals and food products; however, restrictions will apply. The stamp and the CE mark ensure that the product is clearly identifiable.

CWI Connex connecting link	Code	Load capacity [kg]	e [mm]	c [mm]	s [mm]	t [mm]	d [mm]	b [mm]	g [mm]	Weight [kg/pc.]
	CWI 5-6	630	36	7	10	11	7	34	13	0.06
	CWI 6-6	900	42	8	11	12	7	40	13	0.08
	CWI 7-6	1,250	54	9	13	14	9	51	17	0.14
	CWI 8-6	1,600	58	10	13	14	8.50	51	17	0.16
	CWI 10-6	2,500	73	13	18	18	13	70	25	0.37
	CWI 13-6	4,250	92	17	23	25	17	86	29	0.76
	CWI 16-6	6,300	104	21	32	28	20	105	37	1.41

Number close to code constitutes chain, used in combination with product.



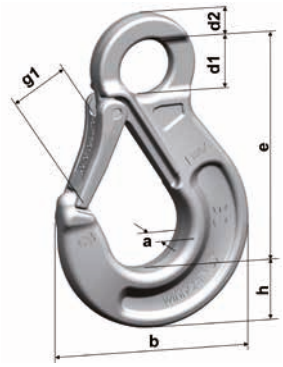
pewag HSWI Eye sling hook

The new face of resilience.

Like all pewag elements, this stainless steel eye sling hook is the result of a sophisticated manufacturing process. Using highgrade stainless steel, the hook is drop-forged and stamped. The compact design of the hook ensures the highest possible load capacity while maintaining a minimum product weight. The hook provides impact for protection for the safety latch, a large hook mouth and an extra-wide hook point to prevent accidental hooking into the chain. Due to the flat section on the eye, the hook is also compatible with alternative connecting systems.

This eye sling hook provides excellent directional stability and perfect guidance of the safety trap. It is particularly suited for the assembly of welded and assembled rope lashings. The safety trap engages with the hook point, which provides an effective protection against lateral movements. Forged inspection marks that facilitate the visual recognition of the discard criteria complete this outstanding product.

The manufacturing process is similar to EN 1677-2. The stamp and the CE mark ensure that the product is clearly identifiable. The safety latch assembly is available as spare part SFGWI. Preferred areas of application are (sea-)water and wastewater applications and the product can also be used in connection with chemicals and food products; however, restrictions will apply.

HSWI Eye sling hook	Code	Load capacity [kg]	e [mm]	h [mm]	a [mm]	d1 [mm]	d2 [mm]	g1 [mm]	b [mm]	Weight [kg/pc.]
	HSWI 5/6-6	900	84	20	14	21	8	22	67	0.25
	HSWI 7/8-6	1,600	112	29	20	27	13	32	98	0.70
	HSWI 10-6	2,500	133	33	28	37	15	39	115	1.35
	HSWI 13-6	4,250	172	43	35	48	18	51	147	2.60
	HSWI 16-6	6,300	213	51	44	55	24	66	182	4.85

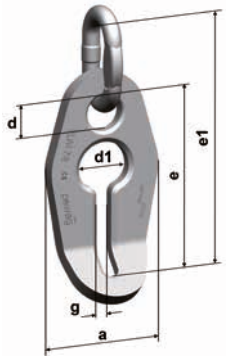
Number close to code constitutes chain, used in combination with product.

pewag VLWI Chain shortener

Safety is key.

This corrosion-resistant chain shortener is manufactured from high-grade stainless steel and has a welded-in BWI transition link for the simple, effortless link-by-link shortening of stainless steel chains. In addition to being extremely convenient in its application, the shortener also offers the benefit of easy retrofitting in assembled systems and ensures that the chain cannot fall out even when it is shortened, as its proper weight will always lock it in place. The stamp and CE mark ensure that the product is clearly identifiable.

Preferred areas of application for the VLWI shortener are water and wastewater applications and the product can also be used in connection with chemicals and food products; however, restrictions will apply and we recommend that you contact the manufacturer for advice prior to exposing the product to such use.

VLWI Chain shortener	Code	Load capacity [kg]	e [mm]	e1 [mm]	a [mm]	d [mm]	d1 [mm]	g [mm]	Weight [kg/pc.]
	VLWI 5/6-6	900	80	114	52	16	26	8	0.22
	VLWI 7/8-6	1,600	111	156	68	22	34	11	0.57
	VLWI 10-6	2,500	133	186	86	27	40	12	1.06
	VLWI 13-6	4,250	169	242	108	32	52	16	2.22
	VLWI 16-6	6,300	204	284	134	38	64	20	4.16

Number close to code constitutes chain, used in combination with product.

Correct application

Correct application

Correct application

Wrong application

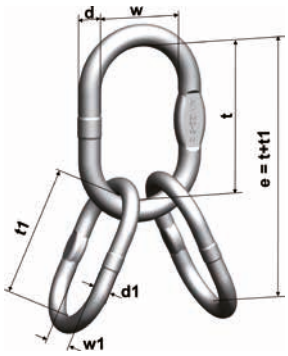
pewag VAWI Special master link assembly for wire ropes

One for all.

With its flattened transition links, this stainless steel master link assembly for wire ropes opens up universal connection possibilities. If safety is your primary concern, you can't go wrong with this IV-leg master link assembly with extra-large transition links to create III- and IV-leg wire rope slings in the welded or assembled system. The assembly is wide enough to fit two rope thimbles per transition link and is electrically welded and stamped for an extra-clean finish.

The manufacturing process of this corrosion-resistant, grade 5 master link assembly is similar to DIN 5688-1 and DIN 3088-1989. It is tested to 100 % of its maximum load capacity. The stamp and CE mark ensure that the product is clearly identifiable.

Preferred areas of application for the VAWI IV-leg master link assembly G5 are water and wastewater applications and the product can also be used in connection with chemicals and food products; however, restrictions will apply and we recommend that you contact the manufacturer for advice prior to exposing the product to such use.

VAWI Special master link assembly for wire ropes	Code	Consisting of	Can be used up to single hook according to DIN 15401 no.	Load capacity 0°-45° [kg]	Weight [kg/pc.]
	VAWI 6-6	AWI 16-6 + 2 AWI 13-6	2.5	1,850	1.21
	VAWI 7/8-6	AWI 18-6 + 2 AWI 16-6	5	3,350	1.98
	VAWI 10-6	AWI 22-6 + 2 AWI 22-6	6	5,250	4.80
	VAWI 13-6	AWI 26-6 + 2 AWI 26-6	8	8,900	7.38
	VAWI 16-6	AWI 32-6 + 2 AWI 32-6	10	13,200	12.42

Code	e [mm]	d [mm]	t [mm]	w [mm]	d1 [mm]	t1 [mm]	w1 [mm]
VAWI 6-6	220	16	110	60	13	110	60
VAWI 7/8-6	245	18	135	75	16	110	60
VAWI 10-6	320	23	160	90	23	160	90
VAWI 13-6	360	27	180	100	27	180	100
VAWI 16-6	400	32	200	110	32	200	110

Number close to code constitutes chain, used in combination with product and attribution of ropes under construction of WLL in accordance of relevant rules of rope slings.

pewag SSWI Safety shackle

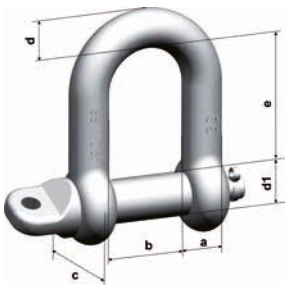
Withstands any vibrations.

Yet another quality product made from high-grade steel that is forged, stamped and tested to within an inch of its life before it is put to use. This stainless steel safety shackle with a reinforced suspension bolt is designed for use as an end fitting in chain and wire rope slings and in connection with pump chains for the lifting of submersible pumps and breathers, where maximum safety is key. The product comes with a safety mechanism to protect against unintentional release. Please note that it cannot be mounted directly onto the chain and onto some transition links.

If used correctly, the SSWI Safety shackle easily withstands vibrations. Each of these safety products bears the CE mark and has a code on the bolt and pins for added traceability.

Preferred areas of application for the shackle are water and wastewater applications and the product can also be used in connection with chemicals and food products; however, restrictions will apply and we recommend that you contact the manufacturer for advice prior to exposing the product to such use.

Bolt safety mechanism:
S = with safety splint
C = with bolt adhesive

SSWI Safety shackle	Code	Load capacity [kg]	e [mm]	a [mm]	b [mm]	d [mm]	d1 [mm]	c [mm]	Weight [kg/pc.]
	SSWI 0,4 t-S [1)]	400	35	8	21.50	8	9	18	0.07
	SSWI 0,5 t-S	500	33	8	18	8	9	18	0.07
	SSWI 1,25 t-S	1,250	40	12	25	12	13	25	0.23
	SSWI 2 t-S	2,000	60	16	32	16	17	32	0.53
	SSWI 3,2 t-S	3,200	78	19	41	19	21	47	1.03
	SSWI 5 t-S	5,000	109	25	56	25	29	60	2.46
	SSWI 26-C	13,000	152	34	76	34	38	75	5.80

1) will be available shortly

Other sizes and special models available on request!
Stronger shackles are also available on request.

pewag PLGWI Eyebolt

PLGWI pewag winner profilift gamma inox – patented, rust-resistant comfort.

Naturally, the PLGW lifting point is also available in a corrosion-resistant version – as the PLGWI eyebolt, offering all the tried-and-tested pewag advantages: versatility when it comes to areas of application, accurately fitted measurements, optimised load capacities and unsurpassed ease-of-use. But the PLGWI offers even more than that:

The eyebolt is 360° rotatable, comes with an interchangeable special screw that is 100 % crack-tested and marked with the load capacity and the thread size! An integrated sleeve protects the surface of the load. The batch number displayed on all load-bearing parts such as the eye and screws as well as the serial number make identification, traceability and performance of mandatory, regular inspections simpler than ever.

Additional benefits of the PLGW inox lifting point:
- Extendable areas of application thanks to Duplex steel with heightened corrosion-resistance
- With the “Basic” version, the PRE/N value that determines the alloy composition and thus also the level of corrosionresistance lies at approx. 34

PLGWI basic:
A simplified alternative is the pewag PLGWI pewag winner profilift gamma inox basic. Offering the same benefits as the pewag PLGW in terms of measurement, load capacity and application, the pewag PLGW basic differs solely when it comes to assembly, as mounting and removing requires the use of a hexagon Allen wrench.

For the “supreme” version of the PLGWI lifting point, the name really says it all: Its tool-free assembly is patented and unique. The “basic” version requires a hexagon Allen wrench for mounting and removal. This version is made exclusively from Duplex, with ring, screw and sleeve manufactured from 1.4462. In the “supreme” version, the elements of the latching system are made from corrosionresistant material. Each eyebolt comes with an operating manual that contains detailed information on usage as well as a load capacity table categorised by lifting method, number of legs and angle of inclination, for easy reference whenever you need it.

PLGWI supreme – tool-free handling

PLGWI basic – assembly with tools

PLGWI supreme: tool-free assembly and disassembly
Latch in position 1: Latch is not in contact with the screw (fig.: PLGWI supreme rotatable).
- The latch is held in place with a patented spring
- The eyebolt is rotatable

Latch in position 2: Latch is in contact with the screw. (fig.: PLGWI supreme disassembly)
- The latch is held in place with a patented spring
- The eyebolt is not rotatable, i.e. the fastening torque is transmitted to the screw and thus the eyebolt can be (re-)assembled

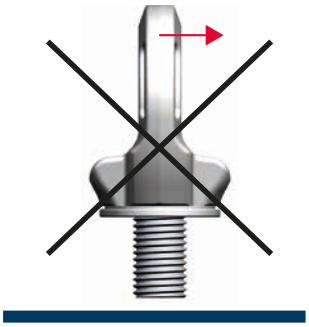
Permitted usage
For load capacities in the permitted directions of pull, please refer to the load capacity table.
- Adjust the lifting point in the permitted load direction before loading
- Loadable with a 4-fold safety factor under break in all directions

Non-permitted usage
During assembly, ensure that improper loading cannot arise due to any of the following factors
- Direction of pull is obstructed
- Direction of pull is not within the indicated area
- Loading ring rests against edges or loads


PLGWI supreme rotatable


PLGWI supreme disassembly

Permitted directions of pull

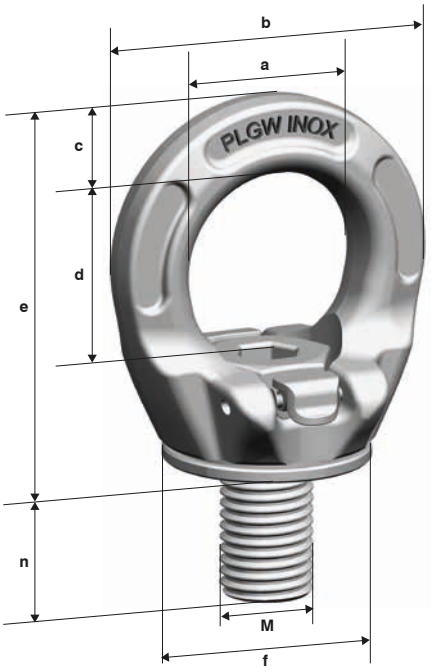

Non-permitted directions of pull

pewag PLGWI Eyebolt

For additional details and information, please refer to the full operating manual.

Each lifting point comes with an individual serial number.

For detailed information such as method of lifting, number of legs, angle of inclination etc., please refer to the tables with the technical data.



Please refer to the tables with technical data for all corresponding values

Assembly video PLGW

For 3D data on the lifting points, visit www.pewag.com

Method of lifting										
Number of legs	1	1	2	2	2	2	3+4	3+4	2	3+4
Angle of inclination	0°	90°	0°	90°	0-45°	45°-60°	0°-45°	45°-60°	asymm.	asymm.

Code	Thread [mm]	Fastening torque [Nm]	Load capacity [kg]								
PLGWI M20	M20	Simply tighten by hand	3,800	2,000	7,600	4,000	2,800	2,000	4,200	3,000	2,000	2,000

Code	Thread [mm]	Load capacity [kg]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	n [mm]	n max [mm]	⬡ [mm]	Weight [kg/pc.]
PLGWI M20	M20	2,000	40	72	17	40	80	45	30	160	12	0.60

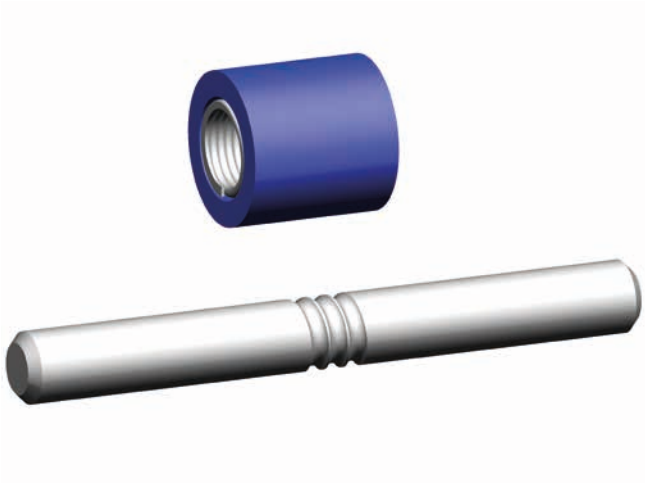
pewag CBHWI bolts and safety bush

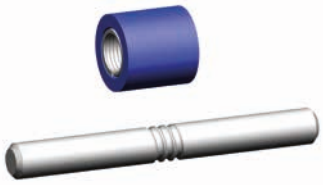
Because safety comes first.

Any whole is more than the sum of its parts – and this is particularly true for the high-quality combinations within the pewag portfolio. The CBHWI safety set that goes with the Connex connector consists of a stainless steel suspension bolt and a spiral spring (Mat. 1.4462) that is set in an enlarged synthetic sleeve for particularly easy fitting, ensuring that the suspension bolt always locks perfectly in place.

Variety of use: CBHWI bolts and safety bushes for grade 6 plus correspond to the design of CBHWI grade 5 and may therefore also be used as replacement parts. Please note the modified material properties of grade 6 plus!

Important: The replacement sets for grade 5 are not suitable for CWI grade 6 plus! Only bolts stamped with G6 plus may be used as replacement parts!



CBHWI Bolts and safety bush	Code	For connecting link
	CBHWI 5-6	CWI 5-6
	CBHWI 6-6	CWI 6-6
	CBHWI 7/8-6	CWI 7-6 + CWI 8-6
	CBHWI 10-6	CWI 10-6
	CBHWI 13-6	CWI 13-6
	CBHWI 16-6	CWI 16-6

pewag SFGWI Safety catch

Extra strength you can count on.

It's all in the name: Safety is what this stainless steel safety catch set with an extra-strong spring and rivetable safety pin is all about. The catch is simple to use and its quality speaks for itself, with even the tiniest parts manufactured to absolute perfection.

SFGWI Safety catch	Code	For hook
	SFGWI 5	HSWI 5 stamped HSK 5 or HK 5
	SFGWI 7	HSWI 7 stamped HSK 7 or HK 7
	SFGWI 10	HSWI 10 stamped HSK 10 or HK 10
	SFGWI 13	HSWI 13 stamped HSK 13 or HK 13
	SFGWI 16	HSWI 16 stamped HSK 16 or HK 16
	SFGWI 5/6-6	HSWI 5/6-6 stamped HSWI 5/6-6
	SFGWI 7/8-6	HSWI 7/8-6 stamped HSWI 7/8-6
	SFGWI 10-6	HSWI 10-6 stamped HSWI 10-6
	SFGWI 13-6	HSWI 13-6 stamped HSWI 13-6
	SFGWI 16-6	HSWI 16-6 stamped HSWI 16-6

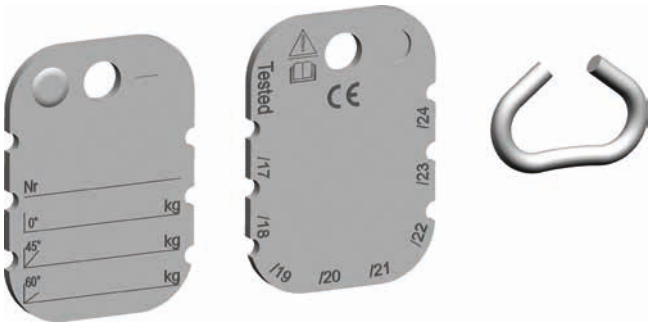
pewag IDWOX Identification tag

New look.

pewag always remains focused on continuously improving its products wherever possible. For this reason, our lifting identification tags now come in a rectangular shape that offers several benefits, all leading towards greater safety. The tags are made from corrosion-resistant material and are attached to the sling with a quick-release fastener, also corrosion-resistant, thus significantly improving safety for the user. The idea was to eliminate the errors that were made repeatedly in the past, when users took the number of corners of the identification tag and the chain dimensions to work out the maximum load capacity without taking the markings on the identification tag into consideration. This is due to the fact that in all standard documentation for lifting chains, the number of corners featured by the identification tag corresponds to the grade category of the lifting chain. However, standards only ever describe the minimum requirements of a product and may of course be exceeded.

A rectangular identification tag effectively prevents these sort of errors from occurring and offers users the following benefits:

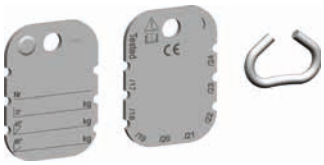
- Prevents misjudging the carrying capacity of the lifting chain as the user is forced to look at the tag prior to each lifting process
- When the marking is not observed, the lifting chain will be classed as a maximum grade 4
- Corrosion-resistant; therefore resistant to acids, caustics and their vapours



- Easily replaceable due to the corrosion-resistant cable with quick-release fastener
- All information is engraved, allowing for customer-specific markings
- Pre-stamped year dates for periodic inspections make the date of the last inspection immediately apparent
- For periodic inspections, only the month needs to be stamped

Fully customisable.

Quality should never have to remain anonymous. This stainless steel ID tag set, consisting of a TKWI identification tag and a mounting device, is now fully customisable to engrave the customer name or any other logo. Inspection data may also be entered and a plaque for different grade classifications makes things easier for technicians!

IDWOX Identification tag	Code	For lifting chains	Consisting of
	IDWOX G6 for chain 4+5 Identification tag set neutral	I- and multi-leg slings	tag + master link open 5x28 + safety information
	IDWOX G6 for chain 6+26 Identification tag set neutral	I- and multi-leg slings	tag + master link open 8x62 + safety information

pewag winner inox stainless steel chain slings in the assembled system – boundless possibilities for combinations.

Below, you will find an overview of different combinations of components within the assembled system. The possibilities are nearly endless! Of course, there are many more options available. We are also happy to supply customised versions upon request. The pewag customer service team is here to help!

1) WLL Reduction WOX 16 – SSWI 5 t-S:
On request also stronger shackles available.

I-leg chain	II-leg chain		III+IV-leg chain	
–	0-45°	45-60°	0-45°	45-60°
5,000	7,100	5,000	10,000	7,500

	Diameter d [mm]	WLL I-leg [kg]	WLL 0-45° [kg]	WLL 45-60° [kg]	*Top fitting	**Possible end fittings				
					Master link AWI	Eye sling hook HSWI	Master link AWI	Transition link BWI	Shackle SSWI	Chain shortener VLWI
I-leg chain sling										
	5	630	-	-	AWI 10-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	1,250	-	-	AWI 13-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	10	2,500	-	-	AWI 16-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	4,250	-	-	AWI 22-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	6,300	-	-	AWI 22-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t-S [1)]	VLWI 16-6
II-leg chain sling										
	5	-	850	630	AWI 10-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	-	1,750	1,250	AWI 16-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	10	-	3,500	2,500	AWI 18-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	-	5,950	4,250	AWI 22-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	-	8,800	6,300	AWI 26-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t-S [1)]	VLWI 16-6
III-leg chain sling										
	5	-	1,300	940	AWI 13-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	-	2,600	1,850	AWI 16-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	10	-	5,250	3,750	AWI 22-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	-	8,900	6,350	AWI 26-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	-	13,200	9,400	AWI 32-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t-S[1)]	VLWI 16-6
IV-leg chain sling										
	5	-	1,300	940	AWI 13-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	-	2,600	1,850	AWI 16-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	10	-	5,250	3,750	AWI 22-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	-	8,900	6,350	AWI 26-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	-	13,200	9,400	AWI 32-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t-S [1)]	VLWI 16-6

L = Effective working length according customer specification

Application instructions for shortening

Correct application

Correct application

Correct application

Wrong application

Welded system

Benefits and information

Welded system

Special areas of application require special products – such as welded, stainless steel chain sling systems.

In this day and age, manufacturers need high-impact arguments in their favour as well as high-impact products if they want to establish themselves on the market long-term. For decades, pewag has successfully adapted to changing user demands and requirements. Our nerves of steel definitely help us come up with innovative developments on an ongoing basis, which we then present to you on a silver platter (or rather, a stainless steel one)!

One of the pewag areas of specialisation is the expert welding of chains and components. Our history in this field goes back an impressive 500 years – that is how long we have been manufacturing chains, with expertise and know-how being handed down from generation to generation. A competitive advantage that we are holding on to with an iron fist (what else)?

All in one piece
When welding round link/profile chains and oval links, no outside material is used, making for a seamless finish. The chaining wires are welded using electric energy and mechanical upsetting forces to create a homogenous unit that withstands any load test. Full penetration (100 %) of welding locations prevents hollows and cracks inside the seams, thus ruling out water and chemical accumulations or residues.

This flawless quality and perfectly smooth surface make pewag chains particularly suited for hygiene applications, as any dirt or impurities may be removed quickly and easily.

If a chain sling is subject to strong vibrations, a welded system offers maximum safety and a long lifespan. Welded chain constructions can be used in a wide range of applications:

- Water, wastewater and pump technology
- Chemical and oil industry
- Environmental technology and renewable energy
- Food, slaughter, hygiene and fishing industry
- Power plant and plant engineering and construction (resistant even at high temperatures)
- Surface treatments
- Navy and military use
- Sports and leisure industry

The stamp on the chain shows the seal that is synonymous with high quality.

Chains and components, combined the way it suits you. Stainless steel chain slings, made from pewag winner inox G6 plus components.

pewag PCWI Stainless steel pump chains

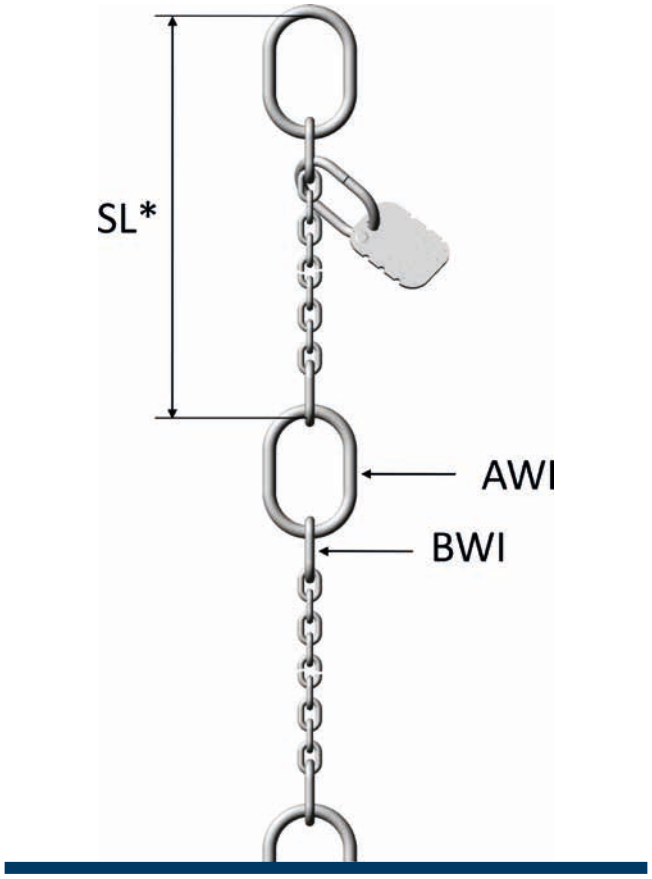
All-round power packs.

The high-grade pump chains have a load capacity that ranges from 320 to max. 12,000 kg. Their welded design, solid construction and range of components makes them particularly suitable for submersible pumps and breathers in water and wastewater applications.

Systematic expediency
These pump chains are tested for perfection and serialised with a dedicated identification tag and test certificate, issued individually for each chain. Enlarged master links at the beginning, at segmented intervals and at the end of the chain make them ideally suited for step-by-step lowering, lifting or locking.

Upon request, we also offer customised variations:
- Two-legged system with “Y” for pumps equipped with 2 eye screws
- Alternative end fittings, such as eye hooks, BWI links or shackles
- Additional stabilisation chain
- Variation of standard segment length
- Customised models available
- Stainless steel hoist chains for pump stations are available upon request

We recommend safety shackles type SSWI for joining the pump to the chain. When placing an order, please indicate the desired total length of the chain or the number of segments as well as the end fitting (e.g. AWI Master link). **Note:** The actual length is a multiple of the segment length, plus the length of the end fitting!



Code	Load capacity [kg]	Master link	Dimensions AWI [mm]	Transition link	Dimensions BWI [mm]	Chain type	SL Number of links	Segment length SL [mm]	Length of master links/end links [mm]	Weight SL [kg]
PCWI 4/320	320	AWI 6	6x60x35	-	-	WOX 4x12-5	77	984	60	0.39
PCWI 4/400	400	AWI 8	8x60x35	BWI 5	5x26x13	WOX 4x12	73	988	60	0.43
PCWI 5/560	560	AWI 8	8x60x35	BWI 7	7x36x16	WOX 5x15	53	943	60	0.62
PCWI 5/630	630	AWI 10	10x80x50	BWI 7	7x36x16	WOX 5x15	53	963	80	0.68
PCWI 6	850	AWI 10	10x80x50	BWI 7	7x36x16	WOX 6x18	47	998	80	0.90
PCWI 7	1,250	AWI 13	13x110x60	BWI 9	9x44x20	WOX 7x21	37	975	110	1.35
PCWI 8	1,600	AWI 13	13x110x60	BWI 10	10x44x20	WOX 8x24	33	990	110	1.70
PCWI 10	2,500	AWI 16	16x110x60	BWI 13	13x54x25	WOX 10x30	25	968	110	2.60
PCWI 13	3,500	AWI 18	18x135x75	BWI 16	17x70x34	WOX 13x39	19	1,016	135	4.50
PCWI 16	6,300	AWI 22	23x160x90	BWI 20	20x85x40	WOX 16x48	15	1,050	160	8
PCWI 20 [1)]	8,000	AWI 26	27x180x100	BWI 22	23x115x50	WOX 20x60	27	2,030	180	21
PCWI 26 [1)]	12,000	AWI 45	45x340x180	BWI 32	32x150x70	WOX 26x78	19	2,122	340	43.20

1) made to order

SL consisting of 1 x AWI, 2 x BWI, WOX chain in standard length. PCWI 4/200 and PCWI 4/320 manufactured without transition links BWI.
All dimensions given in this operating manual are nominal dimensions. Depending on the manufacturing process they are subject to various manufacturing tolerances. Please contact our customer service if required.

Application picture

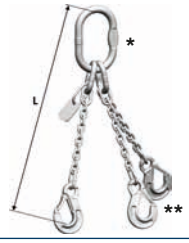
Application picture

Perfection, piece by piece: pewag winner inox stainless steel chain slings and endless chains in the welded system.

Below, you will find an overview of different combinations of stainless steel chain slings and components as well as endless chains. Of course, there are many more options available. We are also glad to supply customised variations upon request. The pewag customer service team is here to help!

1) WLL Reduction WOX 16 – SSWI 5 t-S:
On request also stronger shackles available.

I-leg chain	II-leg chain		III+IV-leg chain	
–	0-45°	45-60°	0-45°	45-60°
5,000	7,100	5,000	10,000	7,500

	Diameter d [mm]	WLL I-leg [kg]	WLL 0–45° [kg]	WLL 45–60° [kg]	*Top fitting Master link AWI	**Possible end fittings Eye sling hook HSWI	Master link AWI	Transition link BWI	Shackle SSWI	Chain shortener VLWI
I-leg chain sling										
	4	400	-	-	AWI 8-6	-	AWI 8-6	BWI 5-6	SSWI 0.5t-S	-
	5	630	-	-	AWI 10-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	6	900	-	-	AWI 13-6	HSWI 5/6-6	AWI 13-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	1,250	-	-	AWI 13-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	8	1,600	-	-	AWI 13-6	HSWI 7/8-6	AWI 13-6	BWI 10-6	SSWI 2t-S	VLWI 7/8-6
	10	2,500	-	-	AWI 16-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	4,250	-	-	AWI 22-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	6,300	-	-	AWI 22-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t-S [1)]	VLWI 16-6
	20	8,000	-	-	AWI 26-6	-	AWI 26-6	BWI 26-6	SSWI 26-C	-
	26	12,000	-	-	AWI 45-6	-	AWI 45-6	BWI 32-6	SSWI 26-C	-
II-leg chain sling										
	4	-	560	400	AWI 8-6	-	AWI 8-6	BWI 5-6	SSWI 0.5t-S	-
	5	-	850	630	AWI 10-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	6	-	1,250	900	AWI 13-6	HSWI 5/6-6	AWI 13-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	-	1,750	1,250	AWI 16-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	8	-	2,200	1,600	AWI 16-6	HSWI 7/8-6	AWI 13-6	BWI 10-6	SSWI 2t-S	VLWI 7/8-6
	10	-	3,500	2,500	AWI 18-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	-	5,950	4,250	AWI 22-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	-	8,800	6,300	AWI 26-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t-S [1)]	VLWI 16-6
	20	-	11,200	8,000	AWI 32-6	-	AWI 26-6	BWI 26-6	SSWI 26-C	-
III-leg chain sling										
	4	-	840	600	VWI 4-6	-	AWI 8-6	BWI 5-6	SSWI 0.5t-S	-
	5	-	1,300	940	VWI 5/6-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	6	-	1,850	1,350	VWI 5/6-6	HSWI 5/6-6	AWI 13-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	-	2,600	1,850	VWI 5/6-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	8	-	3,350	2,400	VWI 8-6	HSWI 7/8-6	AWI 13-6	BWI 10-6	SSWI 2t-S	VLWI 7/8-6
	10	-	5,250	3,750	VWI 10-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	-	8,900	6,350	VWI 13-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	-	13,200	9,400	VWI 16-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t -S[1)]	VLWI 16-6
IV-leg chain sling										
	4	-	840	600	VWI 4-6	-	AWI 8-6	BWI 5-6	SSWI 0.5t-S	-
	5	-	1,300	940	VWI 5/6-6	HSWI 5/6-6	AWI 10-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	6	-	1,850	1,350	VWI 5/6-6	HSWI 5/6-6	AWI 13-6	BWI 7-6	SSWI 1.25t-S	VLWI 5/6-6
	7	-	2,600	1,850	VWI 5/6-6	HSWI 7/8-6	AWI 13-6	BWI 9-6	SSWI 1.25t-S	VLWI 7/8-6
	8	-	3,350	2,400	VWI 8-6	HSWI 7/8-6	AWI 13-6	BWI 10-6	SSWI 2t-S	VLWI 7/8-6
	10	-	5,250	3,750	VWI 10-6	HSWI 10-6	AWI 16-6	BWI 13-6	SSWI 3.2t-S	VLWI 10-6
	13	-	8,900	6,350	VWI 13-6	HSWI 13-6	AWI 22-6	BWI 16-6	SSWI 5t-S	VLWI 13-6
	16	-	13,200	9,400	VWI 16-6	HSWI 16-6	AWI 22-6	BWI 20-6	SSWI 5t-S [1)]	VLWI 16-6

L = Effective working length according customer specification

pewag winner inox stainless steel chain slings are fully functional at a maximum working temperature of 350 °C. As top end fittings for welded chain slings, a master link or IV-legged assembly is assumed. For the bottom end fittings, customers may choose between the HSWI Eye hook, AWI Master link, BWI Transition link and SSWI Shackle. Single chain legs may be shortened easily and safely using the VLWI Chain shortener.

HSWI Eye sling hook	AWI Master link	BWI Transition link	SSWI Shackle	VLWI Shortener
				

Application instructions for shortening

Correct application

Correct application

Correct application

Wrong application

Chain slings assembled with CWI Connex connectors are additionally possible in self-construction by technical experts.

SWI Endless chain	Code	Diameter d [mm]	WLL laced [kg]
These stainless steel endless chains are electrically welded for an extra-clean finish, with the same link dimensions as the chain, welded and tested at 100 % of the load capacity.			
	SWI 4	4	640
	SWI 5	5	1,000
	SWI 6	6	1,400
	SWI 7	7	2,000
	SWI 8	8	2,500
	SWI 10	10	4,000
	SWI 13	13	6,800
	SWI 16	16	10,000

Order example: WOX 7-6 mm SWI 4,000 endless chain with a circumferential length of 4 m.

As part of the comprehensive pewag service, all chain slings and endless chains in the welded system come with an identification tag and test certificate.

User information

For stainless steel chain systems

User information


QS

User information

General and safety information on the use, storage, inspection and maintenance of pewag winner inox chain slings.

General information

The pewag winner inox range was designed for a wide range of applications and easily handles different designs, loads and sling types – this is exactly what we had in mind during the development process. All information on construction and rating of load capacity in the catalogues that follow the uniform load method of rating take this versatility into account. An alternative method for rating the capacity of chain slings also exists, where the exclusive, specific case of application as well as all operating conditions must be known. In such a case, we recommend that you contact the pewag technical service team, as the information given in the catalogues does not apply to such processes.

Responsible use is key
If used correctly and by qualified personnel, pewag winner inox chain slings have a long service life and provide the highest possible degree of safety. Personal and material injury and damage can be prevented by reading and understanding the user information and acting responsibly and providently when using lifting equipment.

Modifications of the condition as delivered

We strongly recommend using exclusively the supplied original components of the pewag winner inox chain slings, for instance bolts, safety pins, screws etc. Modifying the original condition of the chain slings by bending, grinding, separation of parts, welding, drilling, stamping etc. means exposing yourself and others to unnecessary risks as safety can no longer be guaranteed and use thus becomes hazardous. Hazardous conditions and modifications also include exposure to temperatures of more than 350 °C and the removal of safety components such as safety pins, latches etc. If surface treatments should be required, please contact pewag for advice prior to performing such treatment. Dipping, flashing, blasting or removing the coating with chemicals are all dangerous processes that may give rise to hazards. Always contact our technical service department for advice.

Restrictions of use

For adverse operating conditions and / or hazardous conditions, please see the table on page 18.

Temperature
The table on page 18 lists the reduction of load capacities as a result of high temperature. These apply until the chain and / or lifting components have returned to room temperature. pewag winner inox lifting accessories must not be used outside the stated temperature range. In the event of temperatures outside this range, the chain slings must be removed from service.

Effects of acids, caustic solutions and chemicals
If exposure to chemicals such as acids, caustic solutions and chemicals and their vapours, food, cosmetic or pharmaceutical products is unavoidable, pewag experts must be consulted for prior approval. The tables on page 49 also deal with this important issue.

Hazardous conditions
The load capacities indicated in this catalogue are based on the assumption that no hazardous conditions apply. Such hazardous conditions include offshore applications, the lifting of people and potentially dangerous loads such as liquid metals, corrosive or caustic substances or nuclear material. In such special cases, the extent of the hazard must be assessed by an expert beforehand and the load capacity adjusted accordingly. Improper use in hazardous conditions must be avoided. In general, care should be taken to avoid hazardous conditions.

Prevention is the best cure: Essential inspections and tests
Before a lifting component can be used, the following checks must be performed:

- Is the lifting chain really the one that was ordered?
- Has the test certificate and / or certificate of conformity been supplied?
- Do the markings and load capacities indicated on the chain correspond to those indicated on the test certificate / certificate of conformity?
- Where applicable: Have all details of the chain sling been entered into the chain records?
- Has every employee read and understood the user information for chain slings?

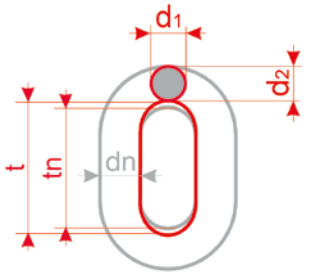
The chain slings must be checked for visible damage or signs of wear prior to each use. In case of doubt of visible damage, the chain slings must no longer be used and handed to a qualified person for inspection.

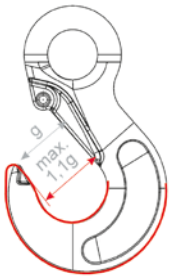
The chain sling must be inspected by a qualified person in accordance with national regulations, but at least once every 12 months. Please note that this interval must be shortened if the lifting chain is frequently working at maximum load capacity! In case of extraordinary events such as uncontrolled exposure to high temperatures, the chain sling must also be subjected to an additional inspection. We recommend subjecting the chain sling to a load test with 1.5 times the working load limit every two years, followed by a visual inspection, or another type of crack test.

Visual inspection criteria
The use of all parts must be discontinued if one or several of the criteria listed below apply:

- Broken part
- Missing or illegible marking on the chain sling, i.e. identification data and / or load capacity indication
- Deformation of suspension or sling parts or the chain itself
- Elongation of the chain. The chain must be discarded if $t > 1{,}05\ t_n$
- Signs of wear, as determined as the mean value of two measurements of diameters d_1 and d_2 carried out at a right angle (see picture). The chain must be discarded if:

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





- Visible damage such as cuts, notches, grooves, surface cracks, discolouration due to heat, signs of subsequent welding, bent or twisted links or other flaws
- Obvious signs of wear or chemical abrasion (such as pitting), or when a permissible wear tolerance has been reached as per the table below
- Cracks and cross-cracks that are visible to the naked eye
- Missing or non-functional safety device as well as signs of widening or twisting of hooks, i.e. noticeable enlargement of the opening or other forms of deformation. The enlargement of the opening must not exceed 10 % of the nominal value! Please note that an opened-out safety catch is a sign that the hook is overloaded

Maximum approved dimensional change:

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 %
CWI	Halves loose	No changing admissible
	e	+ 5 %
	c	- 10 %
Shackles	Bolt loose	No changing admissible
	e	+ 5 %
	d, d_1 and M	- 10 %
Connex bolts	d	- 10 %

Maintenance and repair
pewag winner inox lifting accessories and chain slings should only be repaired by qualified personnel to minimise the risk of improper handling.

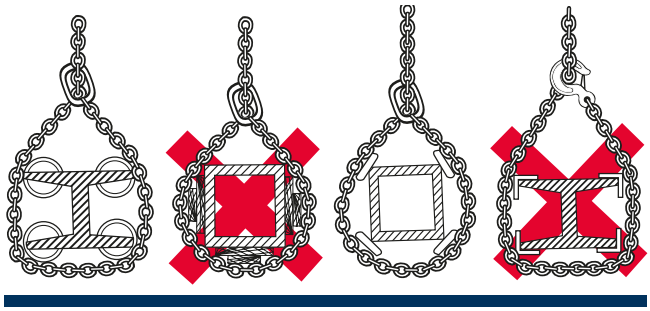
Correct documentation
All tests and inspections and their results must be recorded and kept on file throughout the service life of the chain sling. Careful use is the basis of any maintenance and repair activities of our stainless steel solutions.

Proper storage
pewag winner inox chain slings must always be stored clean and dry. Chemical, thermal or mechanical influences during storage should be avoided.

Correct use of chain slings

Correct angle of inclination
To ensure safe use, slinging points and chain types must be selected in such a way that the angles of inclination of all legs lie within the data given on the identification tag. Ideally, all angles of inclination should be the same. Always avoid angles of inclination of less than 15° because of the high risk of load instability. Never use chain slings with an angle of inclination exceeding 60°!

Edge load – what you need to know
The maximum load capacity of pewag winner inox chain slings is based on the assumption that the individual chain legs are pulled straight under load, i.e. that they do not run over edges. In the case of edge loading, load protection (packing) should to be used to avoid damage. See the picture below for proper and improper use:



If chains are guided over edges without proper protection, their load capacity is reduced significantly and safe use is compromised. For the corresponding load factors, please refer to the table on page 18. In situations where chains have to be looped around a beam or other round-shaped loads, the diameter should be minimum 3 times the chain pitch. For smaller diameters, the load capacity of the chains must be reduced by 50 %.

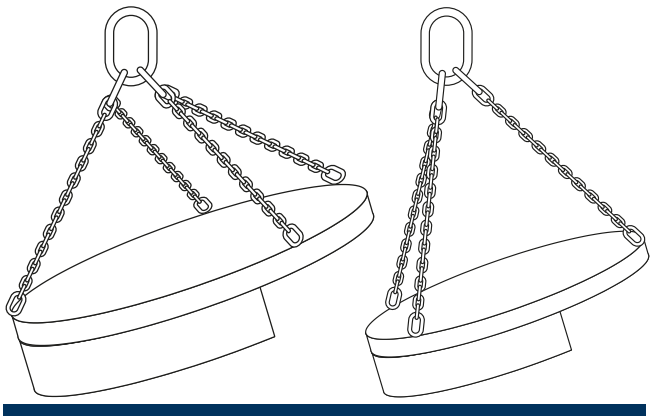
Avoid shock loads to ensure safe loading
For the maximum load capacity of pewag winner inox lifting chains to apply, it is assumed that the individual chain strands are not exposed to shock loads. Where shock loads cannot be avoided, the load factors specified on page 18 apply to determine the final load capacity.

Classification of impacts
- Slight impact occurs for instance when accelerating the lifting or lowering movement
- Medium impact occurs for instance when the chain slips while adjusting itself to the shape of the load
- Strong impact occurs for instance when the load falls into the unloaded chain

Vibrations
If used correctly, pewag winner inox lifting chains and components are able to withstand high load levels and are designed for 20,000 load cycles. However, there is a risk of damage in cases of high dynamic stress. For such cases, the occupational insurance association Metall Nord Süd recommends reducing the stress at working load limit by using higher dimensioned chains and components (thickness and length).

Symmetrical loading
The maximum load capacities for pewag winner inox chain slings are based on the assumption that the load placed on the individual chain legs is distributed symmetrically. Lifting of the load then results in inclination at equal angles, with the individual legs being symmetrical to each other.

The load is considered symmetrical if all of the following conditions are met:
- The load is smaller than 80 % of the stated maximum load capacity
- The angles of inclination of all chain legs are no smaller than 15° and resemble each other or do not differ from each other by more than 15°
- In the case of three and four-leg sling chains, the corresponding plane angles must be within 15° of each other



The majority of the load is carried by II strand (leg)

The majority of the load is carried by II strand (leg)

Always be careful!
If not all of the parameters listed above apply, the load is considered asymmetrical and the lifting process must be assessed by an expert. If in doubt, only one chain leg may be considered load-bearing. Please check the load capacity table for applicable load capacity limits.

Use for intended purpose: Why it matters
pewag chain slings offer perfect quality if they are used for the intended purpose. In cases where not all individual legs are used at the same time, please refer to the load capacity table to determine the correct load capacity limit. In case of doubt or as an alternative, change the load capacity as indicated in the table below:

Precautionary measures
- Hang any individual chain legs that are not being used back into the master link to prevent hazards caused by freely swinging chains or unintended hooking
- Before using several chain slings at the same time, make sure that the crane hook is big enough for all the master rings. Make sure that the master rings cannot fall out of the hook during lifting
- Angles of inclination of more than 45° are not permitted!
- If several chain slings are used at the same time, please ensure that they have the same nominal thickness and grade

Type of chain sling	Number of individual strands (legs) used	Use factor in relation to the working load limit given on the tag
Two-stranded (II-leg)	1	1/2
Three- and four-stranded (II/IV-leg)	2	2/3
Three- and four-stranded (II/IV-leg)	1	1/3
2x single stranded (single leg)	2	1.4 up to 0°-45°
2x two-stranded (II leg)	3 or 4	1.5 up to 0°-45° and 45°-60°

Detailed original operating manuals for individual products are available for download at www.pewag.com. Our manuals are subject to an ongoing improvement process and therefore only valid in their latest version.

Resistance has a name: pewag!

Resistance values for different media

The following values are guideline values to indicate resistance to different material, liquids and chemicals that may deviate in practice.

The corrosion values are based on the assumption that corrosion sets in equally across the entire surface. One measurement of corrosion results from the weight difference of the material after a certain period of time, with the material being weighed before and after corrosion. The weight difference is expressed in grams per square metre and hour. This number corresponds roughly to denudation in millimetres per year. Exact and binding values can only be provided following tests for precisely defined corrosive agents and without dirt or impurities.

Professionals at work
pewag products are used in the food sector, for instance in dairies, slaughterhouses etc., in the chemical industry, for instance in dyeing plants, and in many other areas where safe lifting, conveying and securing is essential.

Material no.	DIN-shortname	Cr %	Ni %	Mo %	Ti
1.4571 (AISI 316 Ti)	X6 CrNiMoTi 17-12-2	16.5-18.5	10.5-13.5	2.0-2.5	Addition
1.4404 (AISI 316 L)	X2 CrNiMo 17-12-2	16.0-18.0	10.0-13.0	2.0-2.5	-
1.4462 (AISI F51)	X2 CrNiMoN 22-5-3	21.0-23.0	4.5-6.5	2.5-3.5	-

Corroding media	Concentration %	Temperature °C	Resistance 1.4571/1.4404	Resistance 1.4462
Atmosphär. corrosion*			0	0
Benzine		20/boiling	0	0
Formic-acid HCOOH	10-50 80	20 boiling 20 boiling	0 1 0 3	0 1 0 1
Ammonia NH4OH	all	20/boiling	0	0
Ammoniumnitrat NH4NO3	hydrous, cold saturated solvent	20/boiling	0	0
Chlorine water saturated		20	1	-
Acetic-acid CH3COOH	10 10-50 80	20 boiling boiling	0 0 1 P	0 0-1 1
Fatty-acid (oil)		150	0	0
Hydrofluoric acid	10 40	20 20	2 P 3	2 P 3
Tannic-acid	50	20/boiling	0	0
Potassium hydroxide KOH	hot saturated	120	1 S	1 S
Lime milk Ca(OH)2 (Calciumhydroxid)		20/boiling	0	0
Seawater		20 boiling	0 P 1	0 P 0
Phosphor-acid H3PO4	1 50 80 concentrated	20 boiling boiling boiling	0 1 2 3	0 1 1 3
Nitric-acid HNO3	1-90 50	20 boiling	0 1	0 1
Hydrochloric-acid HCl	0.2-0.5 1 2	20 50 20 50 20-50	0 P 1 P 0 P 1 P 1 P	0 P 0.2 %: 0 P // 0.5 %: 1 P 0 P 1 P 1 P
Sulfuric-acid H2SO4	0.1 1 5 10	boiling 20 80 boiling 20 50 boiling 20 50 80 boiling	0 0 1 1 0 1 2 0 1 2 2	0+ 0 0 1 0 0 1 0 0 1 2
Trichlorethylene CHCl:CCl2		20/boiling	0 P	0 P

* The complete resistance depends on kind, composition and the water-content of the atmosphere and is in industrial areas and near the coast considerably less than in the highlands or in dry regions.

0 = completely resistent
1 = practically resistent
2 = little resistent
3 = theoretically non-resistent
P = pitting
S = stress corrosion

	g/m²h
0 corresp. to a weight-loss up to	0.1
1 corresp. to a weight-loss from	0.1-1.0
2 corresp. to a weight-loss from	1.0-10.0
3 corresp. to a weight-loss over	10.0
Completely non-resistent	-

KA/16/00368

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