

# CROMOX<sup>®</sup>



KETTEN WÄLDER  
CHAIN-TECHNOLOGY

## Grade 50

### Stainless Steel Lifting Chain & Lifting Components



Sewerage Plants

Chemistry

Water & Wastewater

Food Industry

Environmental Technology

Power Plant Engineering

Renewable Energies

Naval and Military Technology

Mechanical & Plant Engineering

Nautical Engineering

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## **CROMOX CHAINS MADE OF STAINLESS STEEL**

Cromox is an innovation in the field of Stainless Steel chains, offering real advantages in terms of resistance, in particular with respect to aggressive medium.

The new Cromox brand therefore stands for innovative quality products made by Keten Walder, in Germany.

This new development reflects a lot of new information obtained from years of experience and intensive research.

## **CROMOX CHAINS - the name stands for the new power in Stainless Steel.**

**C=Chemical** resistance meeting supreme requirements thanks to carefully used materials and great diversity of applications - also available as special-steel version on demand.

**R=Resistance** to mechanical stain for top-level applications. As for load lifting, Cromox is based on Grade 5 (SF 1:4) in conveying, the hard material insures long service life for the conveyer machines. In addition to being of Grade 5, Cromox lifting chains have a safety factor of 1:4, guaranteeing a high degree of trueness of calibraton and precise running over the chain wheels. Cromox anchor chains exceed by far the requirements of DIN and ISO standards as far as their load-bearing capacity and exact running over anchor windlass wheels is concerned.

**O=Optimum** surface finish thanks to variety of methods of treatment, some of which have been specially developed; natural black for further processing, mechanically brightened for conveying, electropolished for the food and leisure industries, pickled for use as anchor chains, blasted for the lifting of loads.

**M=Materials** which have been specially selected. One of them is a material no: 1.4404 (AISI 316 L), which offers excellent chemical and mechanical advantages, resulting in better corrosion resistance and more favorable properties.

**O=Optimised** accessories for individual requirements; chains, links, hooks, connectors, shorteners, shackles, swivels and rotary parts.

**X=A multiplicity** of possible combinations of individual components, for use in a variety of fields including;

- \*Chemistry \*Food Industry \*Water and wastewater engineering \*Environmental technology
- \*Renewable energies \*Mining \*Power Plant Engineering \*Naval & Military Technology
- \*Nautical Engineering \* Mechanical and Plant Engineering



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## MATERIALS

Cromox chains and components are manufactured in a variety of grades of stainless steel.

Grade AISI 316L is the most common grade of stainless steel, however other grades such as Grade AISI 318LN and Grade AISI 630, are used in batch chains and components depending upon their application. Please see below for further information or contact a Bridco representative if it is imperative that the correct materials are known.



Our products are mainly consisting of 1.4404 (AISI 316L) (low-magnetic) or of 1.4462 (AISI 318 LN) (magnetic), such as hooks, safety latches, bolts, chains, master links, and so on. Safety pins are made of 1.4310 (AISI 302), springs of 1.4310 (AISI 302), identification tags of 1.4301 (AISI 304), ropes of 1.4404 (AISI 316L) and ferrules of 1.4571 (AISI 316 TI). 1.4404 (AISI 316L) and 1.4462 (AISI 318 LN) offer excellent chemical and mechanical advantages. These are: a better corrosion resistance and more favourable mechanical properties.

## CLEAN ENERGY- certificate for clean energy.

Ketten Wälder is using 100 % electricity from Hydropower since beginning of this year as energy-intensive industry and because of responsibility for our environment we deliberately have chosen a power supplier that offers a clean tariff as well for commercial users.

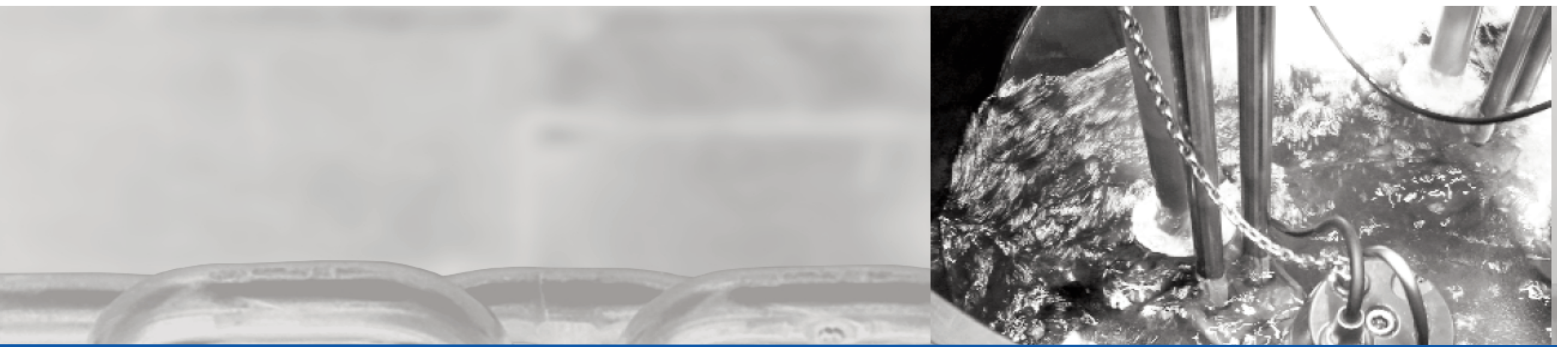
We manufacture in one of Germany's most beautiful areas – the Chiemgau. To preserve its beauty, we are using electricity from hydropower – a clean way to produce electricity. As we have distinct consumption peaks, it is also essential to us, having a power supplier who can adjust flexibly to our demand. And for this purpose hydropower is the perfect technology.

At Ketten Wälder you not only get chains at utmost quality, but they are being manufactured environmentally friendly.



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**CHAIN-TECHNOLOGY**



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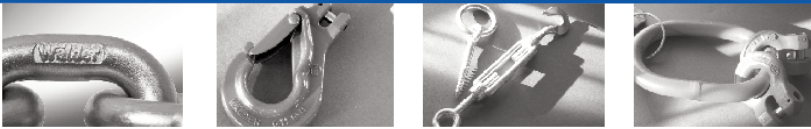
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## Operating Instructions for pump chains



# Operating Instructions for pump chains

## Instructions for safe use and prevention of hazards.

The operating instructions / manufacturer's declaration on hand must be kept for the complete lifetime of the chain. We hereby declare (supported by the certification according to ISO 9000) that the model described below is in accordance with the Essential Health and Safety Requirements of the EC Machine Directives. This declaration shall become void in case the model is modified without our approval or if the periodic test procedures according to the National Regulations of the respective countries are not performed regularly.

### 1. Selection of pump chains.

The following aspects should be considered when selecting the pump chain:

- The National Regulations of the respective countries regarding occupational health and safety and regarding the operation of work equipment must be adhered to.
- The Maximum load capacity as indicated on the capacity label may not be exceeded under any circumstances.
- Subsequent modifications are not permitted.
- The user is responsible for ensuring that the pump chain is used properly as intended.

### 2. Please note prior to first use.

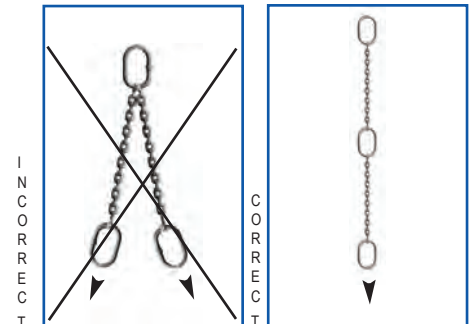
Prior to use, the following prerequisites must be fulfilled:

- The scope of delivery corresponds to the purchase order.
- The test certificate or certificate of compliance with the order is available.
- The lifting capacity is indicated and corresponds to the documentation.

### 3. Handling.

The following aspects must be considered when using the pump chain:

- The operator must make sure that the pump chain is attached properly.
- The end fitting must be checked for a secure fit at regular intervals depending on the purpose and the period of use.
- The chain leg must not be twisted or knotted.
- The mass of the load must be known.
- The instructions of the pump manufacturer must be adhered to.
- Do not abruptly put weight on the pump chain.
- Single-legged pump chains may not be used as double-legged hanger.



### 4. Maintenance.

Inspection must be conducted to make sure that the chain is clearly identifiable (ID Label) and to detect visible defects.

#### Pump chains may no longer be used in case of the following defects:

- Labeling/identifier illegible or missing.
- Deformation of chain links oval links or end fitting.
- Damage(notches, distortions, corrosion).

A specialist must inspect the chain at intervals depending on the frequency of use; in any case, however after 12 months at the latest.

Please note the following aspects in this connection.

- Cleaning procedures affecting the properties of the material may not be applied (heat, acidic or alkaline cleaning agents, concealing of surface damage, etc).
- During the inspection, sufficient lighting must be provided and all of the pump chain components must be checked.
- All inspections must be recorded and verified in writing.

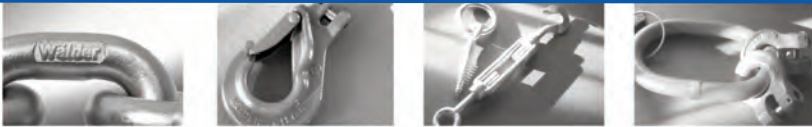
**Refer to Australian Standards for checking intervals & testing procedures.**

### 5. Please consider the following with regard to maintenance.

- It is not permitted to replace individual chain links (whole strand only).
- Welded systems must be repaired by the manufacturer.
- In case the pivot bolt of the D-shackle is deformed, it must be replaced.

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## General Safety Notes for CROMOX chain slings (Grade 5)



# General Safety Notes for CROMOX chain slings (Grade 5)

## 1. Choosing the appropriate chain sling.

### Instruction for safe use and avoidance of danger.

Keep this safety note / manufacturer's declaration for the entire utilisation time.

- Application is only allowed for slinging and lifting loads.
- It is to be made sure that the safe working loads indicated on the attached tags are not exceeded.
- Changes in the safe working load is dependant on the temperature:

safe working load in dependence of the temperature t			
	-45° C < t ≤ 350° C	-350° C < t ≤ 450° C	-450° C < t ≤ 550° C
working load in %	100	75	50
			above 550°
			not permissible

Use within the admissible temperature range means no permanent reduction of the safe working loads after return to room temperature.

- Use acids and alkalis or application in acid or alkaline vapors is only admissible if the material is resistant to corrosion.
- Any self effected modifications, such as exchange of components, thermal or galvanic treatment, will invalidate the product liability of Ketten Walder GmbH
- In the case of particularly endangering conditions (lifting of persons; caustic substances; liquid metals; etc) the the degree of endangerment is to be assessed by a competent person and the safe working load is to be adjusted accordingly.

## 2. Visual Inpection.

Prior to the first application, it is to be made sure that

- The chain sling delivered is exactly the one that was ordered
- The test certificate has been provided
- The chain sling is complete with markings and indications as to the safe working load and that those data are consistent with the test certificates.
- All the details concerning the chain sling have been included in the card index

**Prior to each use the chain has to be visually inspected to check if there is any apparent damage or sign of wear.**

## 3. Handling of the load.

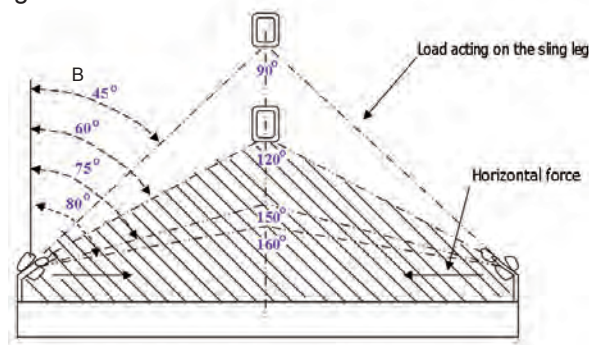
- Any particular specifications regarding the load have to be observed.
- Before starting the lifting operation, it has to be made sure that the load is freely movable and that it is not anchored or fixed.
- The mass of the load must be known. If not it can be taken from documents or shall be determined by calculation.
- The location of the centre of gravity should be determined when choosing the sling points and should meet the following conditions;

chain slings	lifting point
single leg	to be perpendicular over the centre of gravity
double leg	for both legs to be over the centre of gravity
3 and 4-leg	if ever possible to be evenly distributed over a plane about the centre of gravity and located over the centre of gravity

- To Ensure the stability of the load when using multi-leg chain slings, the sling angle B should be >15 deg and should be within the indicated range. It must, however, not exceed 60deg (see example in Fig. 1).

# General Safety Notes for CROMOX chain slings (Grade 5) cont.

Fig.1



The hatched area shows angles of inclination greater than 120° where sling chains must not be used.

4. When applying a load sling, the following must be observed.

- The load hook for attaching the chain sling should be directly over the centre of gravity.
- Chain must not be twisted or knotted.
- A load should always be attached to the hook saddle and must never be applied to the tip of the hook.
- Hooks and suspension links must be freely movable in order to prevent deformation due to bending stress.
- When using a multiple leg chain sling in a vertical hitch, the hooks must face outwards.
- When using the choker hitch, the safe working load is reduced to 80%.
- In order to avoid damage to chains or to the load when using choker hitches, it may be necessary to use intermediate layers or edge protectors.
- In order to avoid a load swinging in a dangerous manner, it is recommended to use a holding rope.
- Do not shock-load or jerk loads.
- In indicating the safe working load, it is assumed that the individual legs of the chain sling are loaded symmetrically. Symmetrical loading can be assumed if all of the following conditions are met.
  - ▶ the load is less than 80% of the rated safe working load and
  - ▶ the angle of inclination for each chain leg is not less than 15deg and
  - ▶ the angle of inclination of the chain legs do not deviate more than 15deg from each other and
  - ▶ the sling attachment points for 3- and 4-legged chain slings are located in a
  - ▶ sling plane of not more than 15deg.
- For unsymmetrical loading, the classification of the lifting operation as well as the determination of the safe working load is to be entrusted to a competent person. Alternatively in the case of unsymmetrical loading, the safe working load should be reduced to 50% of the rated value.
- When using multi legged chain slings, the following is to be observed if not all of the legs are required for lifting.
  - ▶ Individual legs which are not being used should be hooked back onto the master link.
- All influencing factors are to be taken into account when determining a sling type and choosing the appropriate chain sling, with the safe working load to be greater than the load to be lifted.
- Safety lifting operations;
  - ▶ ISO 12480-1 is to be observed in the planning and carrying out of the lifting operations.
  - ▶ Hands and body parts are to be kept clear when tautening the chain sling.
  - ▶ No other person must be put in danger.

5. When putting the load down, the following is to be observed.

- The place where the load is to be put down should be prepared and made sufficiently accessible. The ground must have sufficient load-bearing capacity. It may be necessary to stabilise the load by using wooden blocks or the like. In order to prevent damage, the sling chain must not be wedged, nor pulled out by means of the lifting gear.
- Storage of chain slings that are not in use.
- ▶ In order to minimise corrosion attacks on chain slings that have been used in acids or alkalis or in acid or alkaline vapors, those chain slings should be cleaned thoroughly also before removing them from operation temporarily.

## General Safety Notes for CROMOX chain slings (Grade 5) cont.

- ▶ Chain slings should be stored on specially designed and provided racks. If chain slings are lying on the floor, there is a risk that they might get damaged.
- ▶ Chain slings remaining on the crane hook should be hooked back to the master link.
- ▶ If chain slings are not to be used in the foreseeable future, they are to be cleaned and protected against corrosion.

### 6. Maintenance.

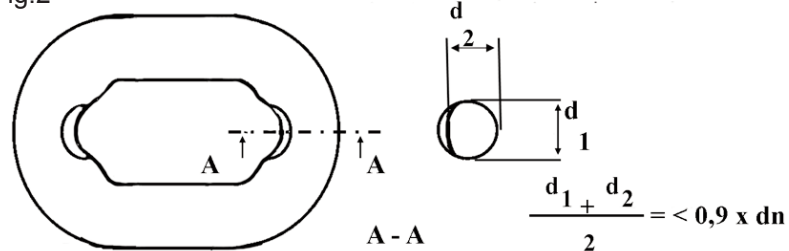
Inspection should be performed by a competent person at intervals of no more than 12 months. If necessary, these intervals should be shortened in dependence of the circumstances of use.

- Prior to inspection, the chain slings are to be cleaned thoroughly.
- Any cleaning method that does not attack the basic material is admissible, whereas any processes or procedures that may cause hydrogen embrittlement, overheating or material abrasion or which may hide surface damage are to be avoided.
- Sufficient lighting is to be provided during inspections and all components of the chain sling are to be examined.
- By means of visual inspections, the chain slings are to be checked for unmistakable identification ( tags) as well as for visually noticeable defects.

If any of the following defects are found the chain sling has to be removed from the operation and inspected by a competent person or serviced / repaired:

- ▶ Marking / identification illegible or missing.
- ▶ Deformation of suspension or sling parts.
- ▶ Inadmissible elongation of chain links, differences in leg lengths.
- ▶ If, as a result of wear and tear, the nominal thickness of a chain link is  $< 90\%$  (see Figure.2)

Fig.2



- ▶ Damage (cuts, notches, grooves, cracks, discoloration due to heat, excessive corrosion, bent or twisted links, or any other defects).
- ▶ Signs of widening (excessive throat opening) or deformation of hooks.
- ▶ The widening must not exceed 10% of the nominal measure; if hooks with safety catches are used the catch must not become disengaged.
- Inspections are to be recorded and proved in writing

### 5. When performing maintenance work, the following is to be observed.

- Each individual part of the chain sling has to meet the requirements of DIN 5687, DIN 5688 Part 1 and DIN 7541.
- Individual chain links are not to be replaced - replace complete legs instead.
- Any individual parts which are broken, noticeably deformed, seriously corroded, or show deposits which cannot be removed, are to be discarded or replaced.
- Minor notches or furrows in parts of chain slings may be evened out if the remaining material thickness in this point is  $> 90\%$  of the nominal thickness and no sudden cross-sectional change is noticeable.
- Welded chain slings may only be repaired by the manufacturer.
- If welding operations have been performed on chain slings, each individual leg which has been repaired has to be tested subsequently with twice the SWL value.
- Replacement of mechanical connection links requires no load testing if the individual part testing is certified.
- ▶ CE Label for completely assembled chains.
- ▶ The label guarantees that the technical requirements of the EC guidelines have been met.

### Caution:

It is prohibited to assemble chains and components of different grades.

## STAINLESS STEEL CHAIN SLINGS, MECHANICALLY ASSEMBLED

Stainless Steel chain sling Grade 50, similar DIN 5688-1 1-leg sling, 2-leg slings, 3-leg slings 4-leg slings

Chain dia/mm	Working load limit verticle/kg
6	750
8	1250
10	2000
13	3200
16	5000
18	7000



L= Length on customer demand.

Chain dia/mm	Working load limit 60 deg kg	Working load limit 90 deg kg	Working load limit 120 deg kg
6	1200	1000	750
8	2000	1700	1250
10	3200	2800	2000
13	5000	4500	3200
16	8000	7100	5000



Chain dia/mm	Working load limit 60 deg kg	Working load limit 90 deg kg	Working load limit 120 deg kg
6	1200	1000	750
8	2000	1700	1250
10	3200	2800	2000
13	5000	4500	3200
16	8000	7100	5000



Chain dia/mm	Working load limit 60 deg kg	Working load limit 90 deg kg	Working load limit 120 deg kg
6	1200	1000	750
8	2000	1700	1250
10	3200	2800	2000
13	5000	4500	3200
16	8000	7100	5000



### Shortening is possible

Chain dia/mm	Working load limit kg
6	750
8	1250
10	2000
13	3200
16	5000



### Terminal Links



Clevis Hook

Master Link


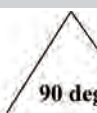
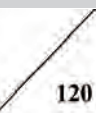
Dee Shackle


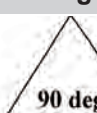
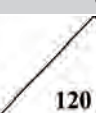
Eye Hook


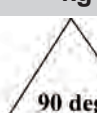
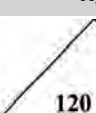
## STAINLESS STEEL CHAIN SLINGS, WELDED SYSTEM

Stainless Steel chain sling Grade 50, similar DIN 5688-1 1-leg sling, 2-leg slings, 3-leg slings 4-leg slings.

Chain dia/mm	Working load limit verticle/kg
6	750
7	1000
8	1250
10	2000
13	3200
16	5000
18	7000

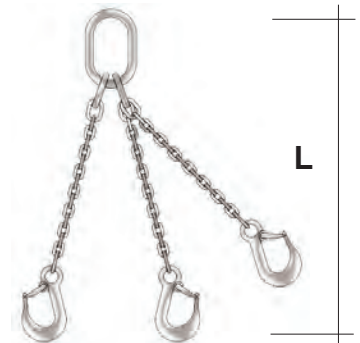
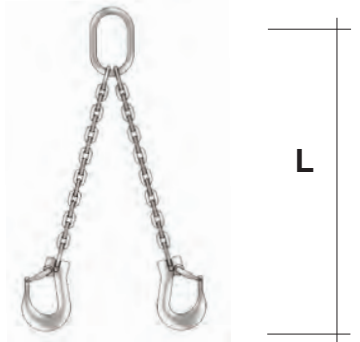
Chain dia/mm	Working load limit kg	Working load limit kg	Working load limit kg
			
	<b>60 deg</b>	<b>90 deg</b>	<b>120 deg</b>
6	1200	1000	750
7	1400	1400	1000
8	2000	1700	1250
10	3200	2800	2000
13	5000	4500	3200
16	8000	7100	5000
18	9500	9500	7000

Chain dia/mm	Working load limit kg	Working load limit kg	Working load limit kg
			
	<b>60 deg</b>	<b>90 deg</b>	<b>120 deg</b>
6	1200	1000	750
7	1400	1400	1000
8	2000	1700	1250
10	3200	2800	2000
13	5000	4500	3200
16	8000	7100	5000

Chain dia/mm	Working load limit kg	Working load limit kg	Working load limit kg
			
	<b>60 deg</b>	<b>90 deg</b>	<b>120 deg</b>
6	1200	1000	750
7	1400	1400	1000
8	2000	1700	1250
10	3200	2800	2000
13	5000	4500	3200
16	8000	7100	5000

### Shortening is possible

Chain dia/mm	Working load limit kg
6	750
8	1250
10	2000
13	3200
16	5000

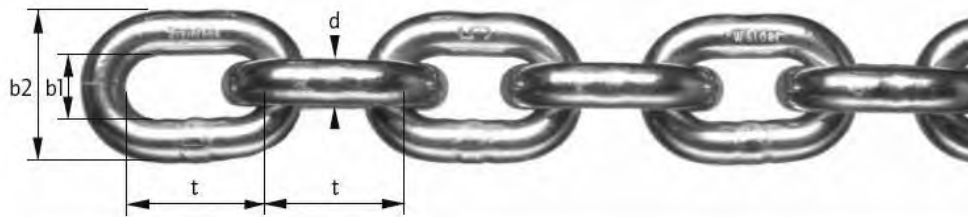


### Terminal Fittings



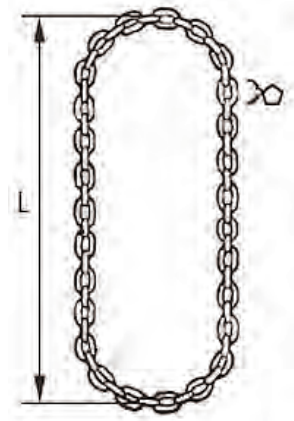
## Stainless Steel chain AISI 316 L Grade 50, similar DIN 5687-1

Code	Dimensions / mm				Weight	W.L.L	Breaking Force
	d	t	b1 min.	b2 max.	ca.kg/m	kgs	kN
KW-105515EP	5.0	15.0	6.5	18.5	0.54	500	20
KW-105660EP	6.0	18.0	7.8	22.2	0.80	750	30
KW-105670EP	7.0	21.0	9.1	25.9	1.10	1000	40
KW-105680EP	8.0	24.0	10.4	29.6	1.40	1250	50
KW-105610EP	10.0	30.0	13.0	37.0	2.20	2000	80
KW-105613BK	13.0	39.0	16.9	48.1	3.80	3200	125
KW-105616BK	16.0	48.0	20.8	59.2	5.70	5000	200
KW-105618BK	18.0	54.0	24.3	64.8	7.30	7000	280



### Stainless Steel endless chain Grade 50

Chain	W.L.L /Vert	W.L.L	W.L.L	
		90 deg	120 deg	
Code	d/mm	kg	kg	kg
KW-132506EP	6	1500	825	600
KW-132507EP	7	2000	1100	800
KW-132508EP	8	2500	1375	1000
KW-132510EP	10	4000	2200	1600
KW-132513BK	13	6400	3520	2560
KW-132516BK	16	10000	5500	4000



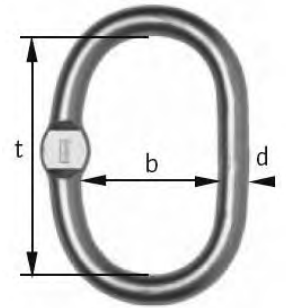
### Work Load Limit (in dependence of chain temperature)

W.L.L	- 40deg C + 250deg C	over 250 deg C to 350deg C	over 350deg C to 450deg C
	100%	75%	50%



## Stainless steel master links, Type NAF with flattened section Grade 50 for 1- and 2- leg slings

		W.L.L			dimensions mm			Weight
Code	Type	1-sling	2-sling		d	t	b	ca kg
			90 deg	120 deg				
KW-177613BK	NAF 6706	1000	1000	750	13	110	60	0.340
KW-177616BK	NAF 0807	1250	1400	1000	16	110	60	0.530
KW-177618BK	NAF 1008	2000	1700	1250	18	135	75	0.800
KW-177622BK	NAF 1310	3200	2800	2000	22	160	90	1.500
KW-177626BK	NAF 1613	5000	4500	3200	26	180	100	2.300
KW-177632BK	NAF 1816	7100	7100	5000	32	200	110	3.900
* KW-177636BK	NAF 2018	8000	9000	6300	36	260	140	6.350
KW-177913BK	NBF 13	2000	1000	750	13	54	25	0.195
KW-177916BK	NBF 16	3200	1700	1250	16	70	34	0.370
KW-177918BK	NBF 18	4100	2800	2000	18	85	40	0.530
KW-177922BK	NBF 20	6300	4500	3200	22	115	50	1.065
KW-177926BK	NBF 26	7600	7100	5000	26	140	65	1.825

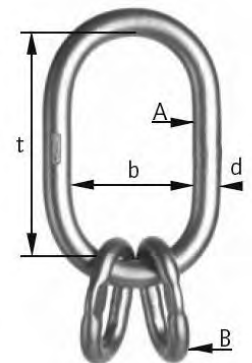


All master links have a flattened section to permit the use of connectors (e.g. clevis shackles type NGS)

\* = Available on request.

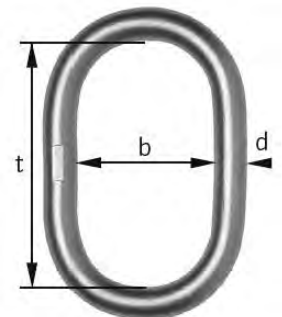
## For 3- and 4- leg slings

		W.L.L		dimensions mm				Wght	
Code	Type	kg		d	t	b	ca.kg		
		90 deg	120 deg						
KW-178618BK	NATF 0607	1600	1120	A18 B13	135	54	75	25	1.20
KW-178622BK	NATF 08	2650	1800	A22 B16	160	70	90	34	2.30
KW-178626BK	NATF 10	4250	3000	A26 B18	180	85	100	40	3.56
KW-178632BK	NATF 13	6700	4750	A32 A22	200	115	110	50	6.05
KW-178636BK	NATF 16	10000	7500	A36 B26	260	140	140	65	10.00



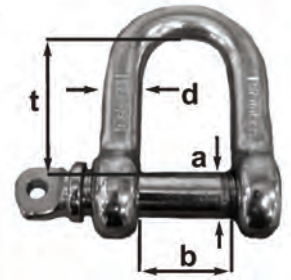
## Stainless Steel master links, 1- and 2- leg type NAG without flattened section Grade 50

		W.L.L			dimensions mm			Weight
Code	Type	1-sling	2-sling		d	t	b	ca kg
			90 deg	120 deg				
KW-177510BK	NAG 05	500	-	-	10	80	50	0.150
KW-177513BK	NAG 6706	1000	1000	750	13	110	60	0.340
KW-177516BK	NAG 0807	1250	1400	1000	16	110	60	0.530
KW-177518BK	NAG 1008	2000	1700	1250	18	135	75	0.800
KW-177522BK	NAG 1310	3200	2830	2000	22	160	90	1.500
KW-177526BK	NAG 1613	5000	4500	3200	26	180	100	2.300
KW-177532BK	NAG 1816	7160	7100	5000	32	200	110	3.900
KW-177536BK	NAG 2018	8000	9000	6300	36	260	140	6.350
KW-177806BK	NBG 6	500	-	-	6	26	13	0.018
KW-177808BK	NBG 8	1000	-	-	8	35	19	0.046
KW-177810BK	NBG 10	1250	710	500	10	44	25	0.092
KW-177813BK	NBG 13	2000	1000	750	13	54	25	0.195
KW-177816BK	NBG 16	3200	1770	1250	16	70	34	0.370
KW-177818BK	NBG 18	4100	2800	2000	18	85	40	0.530
KW-177822BK	NBG 22	6300	4500	3200	22	115	50	1.065
KW-177826BK	NBG 26	7600	7100	5000	26	140	65	1.825



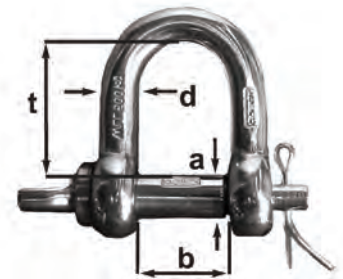
## Stainless Steel Dee shackles Type NSA, Grade 50

		W.L.L	dimensions mm				Weight
Code	Type	kg	a	d	t	b	ca. kg
KW-184605EP	NSA 05 AISI 316	500	9	8	24	17	0.070
KW-184606EP	NSA 06 AISI 316	750	11	10	35	20	0.135
KW-184608EP	NSA 08 AISI 316	1250	13	12	42	25	0.220
KW-184610EP	NSA 10 AISI 316	2000	18	16	64	32	0.510
KW-184613EP	NSA 13 AISI 316	3200	21	19	76	38	0.910
KW-184616EP	NSA 16 AISI 630	5000	19	16	64	32	0.550
KW-184618EP	NSA 18 AISI 630	6300	22	19	76	38	1.00
KW-184620EP	NSA 20 AISI 630	9000	26	22	88	44	1.900
KW-184622EP	NSA 22 AISI 630	11000	29	25	102	51	2.900
KW-184626EP	NSA 26 AISI 630	13000	32	29	114	57	3,100
KW-184627EP	NSA 27 AISI 630	15000	35	32	128	64	4.300
KW-184628EP	NSA 28 AISI 630	18000	38	35	140	70	5.300



## Stainless Steel Safety Dee shackles Type NSS, Grade 50 tested.

		W.L.L	dimensions mm				Weight
Code	Type	kg	a	d	t	b	ca. kg
KW-185604EP	NSS 04 AISI 316	300	7	6	23	12	0.035
KW-185605EP	NSS 05 AISI 316	500	9	8	24	17	0.070
KW-185606EP	NSS 06 AISI 316	750	11	10	35	20	0.135
KW-185608EP	NSS 08 AISI 316	1250	13	12	42	25	0.225
KW-185610EP	NSS 10 AISI 316	2000	18	16	64	32	0.540
KW-185613EP	NSS10 AISI 316	3200	21	19	76	38	0.945



## Stainless Steel clevis shackle Type NGS, Grade 50 AISI 316 L

		W.L.L	dimensions mm			Weight
Code	Type	kg	t	b	a	ca. kg
KW-199606GB	NGS 06	750	26	20	7	0.160
KW-199608GB	NGS 08	1250	30	23	9	0.230
KW-199610GB	NGS 10	2000	40	28	11	0.460
KW-199613GB	NGS 13	3200	48	38	14	0.675
KW-199616GB	NGS 16	5000	50	44	17	1.130



These clevis shackles may be inserted into master links to serve as connectors when assembling complete chain slings.

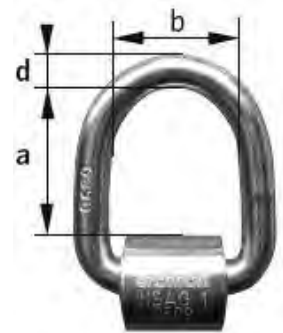
## Stainless Steel Shortening NV, Grade 50 AISI 316 L

		W.L.L	dimensions mm			Weight
Code	Type	kg	a	b	t	ca. kg
KW-194606	NV 06	750	47	10	81	0.180
KW-194608	NV 08	1250	70	12	94	0.380
KW-194610	NV 10	2000	80	15	120	0.710
KW-194613	NV 13	3200	91	20	150	1.180
KW-194616	NV 16	5000	100	21	175	2.300



## Stainless Steel weld on lifting point

		W.L.L	dimensions mm			Weight
Code	Type		a	b	Ød	ca. kg
KW-160005	NSAG 05	0,5	33	30	10	0.165
KW-160010	NSAG 1	1,0	44	40	13	0.370
KW-160020	NSAG 2	2,0	52	55	18	0.955



## Stainless Steel identification tag

Code	Combination tag for single - leg and multiple - leg sling	Weight
KW-135501BK	ID tag without W.L.L marking	0.100
KW-135502BK	ID tag with W.L.L marking	0.100
KW-135503BK	ID tag Single without rope and ferrule	0.100
KW-135507BK	C tag, tag rope & ferrule*	0.070
KW-135508BK	C tag, single without rope and ferrule*	0.070

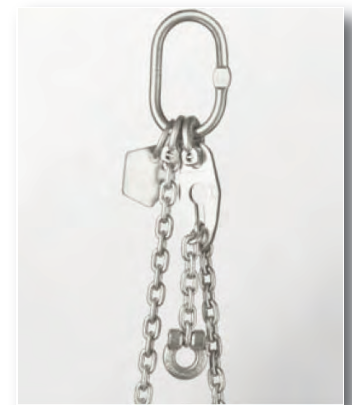


Identification tag



Check tag

\* Check tag marked with years for next inspection.



## Stainless Steel clevis hook Type NGHF, Grade 50 with safety latch AISI 318 LN

		W.L.L	dimensions mm				Weight
Code	Type	kg	t	g	h	ca. kg	
KW-176606GB	NGHF 06	750	78	25	22	0.400	
KW-176608GB	NGHF 08	1250	97	32	28	0.760	
KW-176610GB	NGHF 10	2000	121	41	34	1.440	
KW-176613GB	NGHF 13	3200	143	48	47	2.600	
KW-176616GB	NGHF 16	5000	180	69	57	4.900	



## Stainless Steel eye hook Type NOHF, Grade 50 with safety latch AISI 318 LN

Code	Type	kg	t	g	b	h	ca. kg
KW-175604GB	NOHF 04	300	75	20	17	17	0.185
KW-175606GB	NOHF 06	750	100	25	25	22	0.350
KW-175608GB	NOHF 08	1250	126	32	27	28	0.790
KW-175610GB	NOHF 10	2000	160	39	37	34	1.370
KW-175613GB	NOHF 13	3200	190	51	48	45	3.000
KW-175616GB	NOHF 16	5000	230	66	55	51	4.800
KW-175618GB	NOHF 18	6300	230	66	55	51	4.800



A very rugged hook specially constructed with an integral forged safety latch. The latch itself is particularly resistant to side loading. In the event of the hook being seriously overloaded the latch will spring out of position. The point of the hook is designed to prevent incorrect use with the relevant size of chain, and the design of the hook itself is such that the safety latch does not reduce hook admittance.

## Stainless Steel safety catch for NGHF and NOHF

Code	Type	Weight
		ca. kg
KW-175906	NSG 06	0.030
KW-175908	NSG 08	0.050
KW-175910	NSG10	0.095
KW-175913	NSG13	0.150
KW-175916	NSG 16/18	0.250



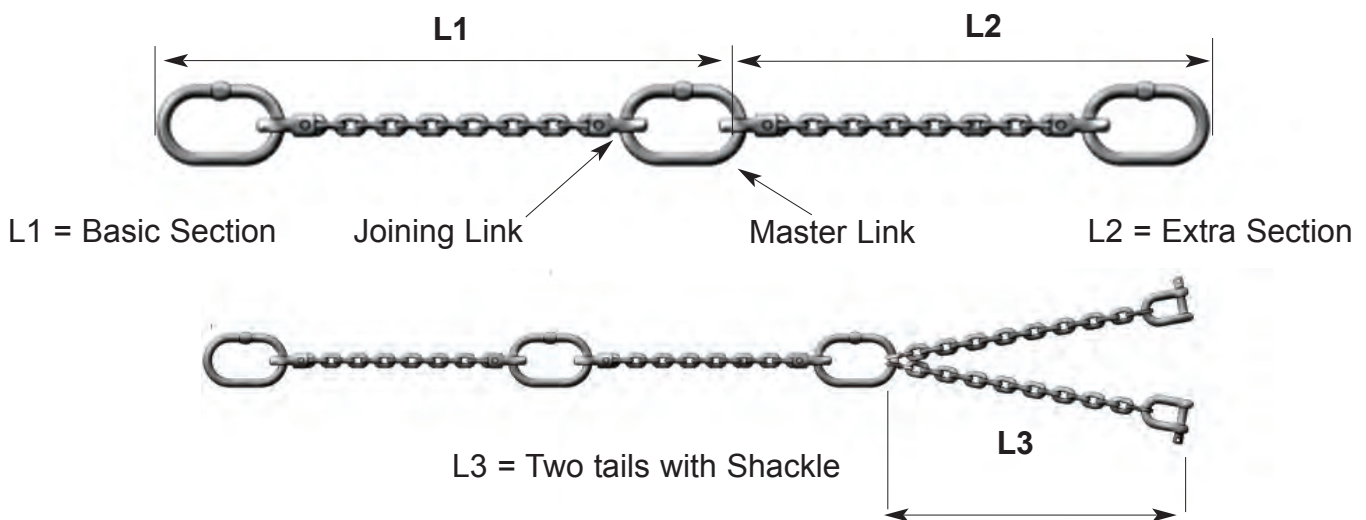
## Stainless Steel bolt and pin for NGHF

Code	Type	Weight
		ca. kg
KW-176906	NBP 06 8 X 28	0.010
KW-176908	NBP 08 10 X 32	0.020
KW-176910	NBP 10 13 X 40.5	0.045
KW-176913	NBP 13 16 X 45	0.070
KW-176916	NBP 16 20 X 55	0.140



## Pre-Welded Stainless Steel Pump Lifting Chains AISI 316L & 318LN

		W.L.L	Master Link	Chain	Joining Link
Code	Type	kg	mm	mm	mm
KW-179604	PK 4	300	8 X 54 X 30	4 X 16	5 X 22 X 9
KW-179605	PK 5	500	10 X 80 X 50	5 X 15	6 X 26 X 13
KW-179606	PK 6	750	13 X 110 X 60	6 X 18	8 X 35 X 19
KW-179607	PK 7	1000	13 X 110 X 60	7 X 21	8 X 35 X 19
KW-179608	PK 8	1250	16 X 110 X 60	8 X 24	10 X 44 X 25
KW-179610	PK 10	2000	18 X 135 X 75	10 X 30	13 X 54 X 25
KW-179613	PK 13	3200	22 X 160 X 90	13 X 39	16 X 70 X 34
KW-179616	PK 16	5000	26 x 180 x 100	16 X 48	22 X 115 X 50
KW-179618	PK 18	6300	32 X 200 X 110	18 X 54	26 X 140 X 65



Standard Length 1000m. Other Lengths available on customer application

## Pre-Made, Pre-Welded Stainless Steel Pump Lifting Chains AISI 316L & 318LN

		W.L.L	Master Link	Chain
Code	Type	kg	mm	mm
KW-05PK1500	PK 5	500	10 X 80 X 50	5 X 1.5
KW-06PK1000	PK 6	750	13 X 110 X 60	6 X 1.5
KW-07PK1000	PK 7	1000	13 X 110 X 60	7 X 1.5
KW-08PK1000	PK 8	1250	16 X 110 X 60	8 X 1.5
KW-10PK1000	PK 10	2000	18 X 135 X 75	10 X 1.5
KW-13PK1000	PK 13	3200	22 X 160 X 90	13 X 1.5
KW-16PK1000	PK 16	5000	26 X 180 X 100	16 X 1.5



Our pre-made pump chains are sold as tadpoles, this consists of a head ring, (master link type NAG) + 1.5m of chain. Custom made lengths are also available on request.

## **Mechanically Assembled Stainless Steel Pump Lifting Chain - Clevis Shackle Configurations**

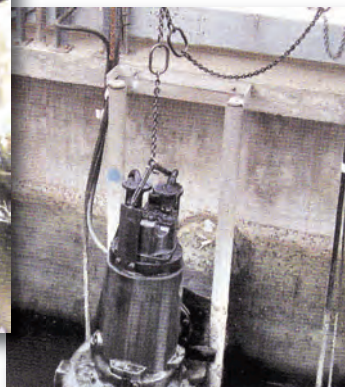


Lengths and configurations to customer specifications

## **Welded Stainless Steel Pump Lifting Chain Configurations**



Lengths and configurations to customer specifications



# Distributors throughout



Australia

and



New Zealand

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