

**CROMOX**

## 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

## 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





# cromox

## 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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# cromox<sup>®</sup>



## 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.

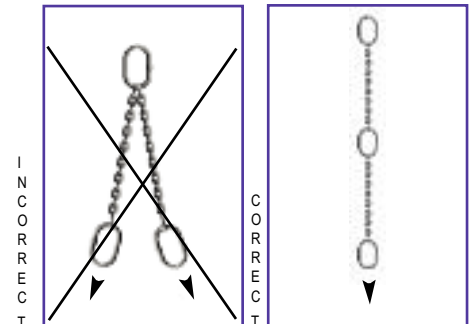
Prior to use, the following prerequisites must be fulfilled:

- 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.

# **cromox**



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



# General Safety Notes for CROMOX chain slings (Grade 50)

## 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;

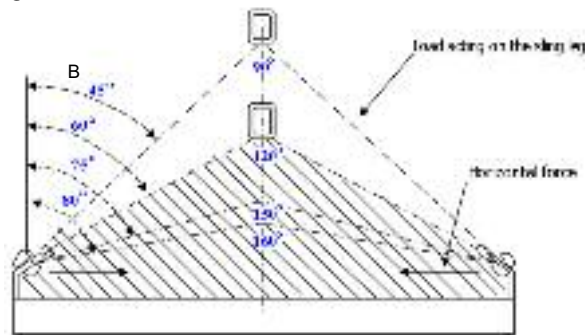
chain slings	lifting point
single leg	to be perpendicular over the centre of gravity
double leg	for both legs to be over the centre of gravity
3 and 4-leg	if ever possible to be evenly distributed over a plane about the centre of gravity and located over the centre of gravity

- 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 50) 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 50) 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.

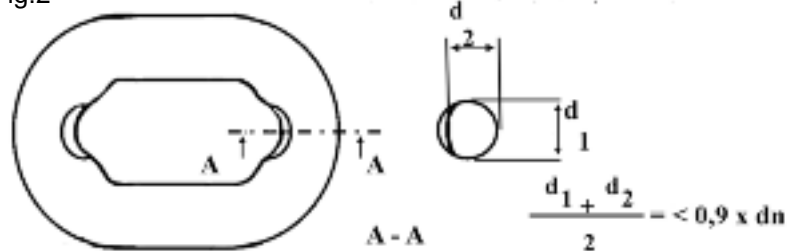
Inspection should be performed by a competent person at intervals of no more than 12 months. If necessary, these intervals should be shortened in dependence of the circumstances of use.

- 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.



### ***Cromox Chain Slings and Components, Grade 60 Stainless***



#### Chain Slings

by Ketten Wälder

Cromox Chain Slings and their accessories guarantee for safety upon lifting and moving of loads. Stainless Steel Chain Slings offer genuine advantages in resistance against aggressive agents.

Fully assembled they enable a wide variety of applications.

- Welded systems with customized lengths and end-fittings are our speciality, tested, with certificate and tag
  - special constructions
  - German Quality Products
- „Made by Wälder“

# CROMOX

## 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 t
6	0.75
8	1.25
10	2.00
13	3.20
16	5.00
18	7.00



L= Length on customer demand.

Chain dia/mm	Working load limit t	Working load limit t	Working load limit t
6	1.20	1.00	0.75
8	2.00	1.70	1.25
10	3.20	2.80	2.00
13	5.00	4.50	3.20
16	7.00	7.00	5.00



Chain dia/mm	Working load limit t	Working load limit t	Working load limit t
6	1.20	1.00	0.75
8	2.00	1.70	1.25
10	3.20	2.80	2.00
13	5.00	4.50	3.20
16	8.00	7.00	5.00



Chain dia/mm	Working load limit t	Working load limit t	Working load limit t
6	1.20	1.00	0.75
8	2.00	1.70	1.50
10	3.20	2.80	2.00
13	5.00	4.50	3.20
16	8.00	7.00	5.00



Shortening is possible

Chain dia/mm	Working load limit kg
6	0.75
8	1.25
10	2.00
13	3.20
16	5.00



### Terminal Links



Clevis Hook

Master Link

Dee Shackle

Eye Hook

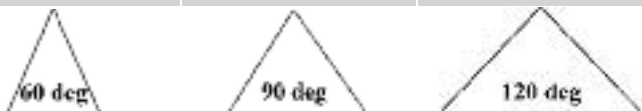
# CROMOX

## STAINLESS STEEL CHAIN SLINGS, WELDED SYSTEM

Stainless Steel chain sling Grade 60, similar DIN 5688-1 1-leg sling, 2-leg slings, 3-leg slings 4-leg slings.

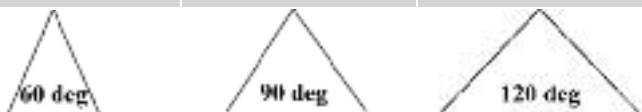
Chain dia/mm	Working load limit t
6	0.90
7	1.20
8	1.50
10	2.40
13	3.85
16 (G50)	5.00
18 (G50)	7.00

Chain dia/mm	Working load limit t	Working load limit t	Working load limit t
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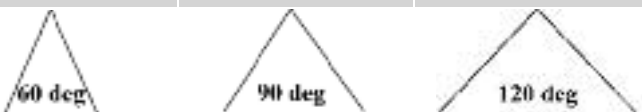
6	1.50	1.25	0.90
7	2.0	1.40	1.20
8	2.40	2.10	1.50
10	3.85	3.35	2.40
13	5.00	4.50	3.85
16 (G50)	8.00	7.00	5.00
18 (G50)	12.00	9.80	7.00

Chain dia/mm	Working load limit t	Working load limit t	Working load limit t
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6	1.50	1.25	0.90
7	2.0	1.40	1.20
8	2.40	2.10	1.50
10	3.85	3.35	2.40
13	5.00	4.50	3.85
16 (G50)	8.00	7.00	5.00

Chain dia/mm	Working load limit t	Working load limit t	Working load limit t
--------------	-------------------------	-------------------------	-------------------------



6	1.50	1.25	0.90
7	2.0	1.40	1.20
8	2.40	2.10	1.50
10	3.85	3.35	2.40
13	5.00	4.50	3.85
16 (G50)	8.00	7.00	5.00



L= Length on customer demand.



Shortening is possible

Chain dia/mm	Working load limit kg
6	0.90
8	1.50
10	2.40
13	3.85
16 (G50)	5.00



### Terminal Fittings



Eye Hook

Master Link

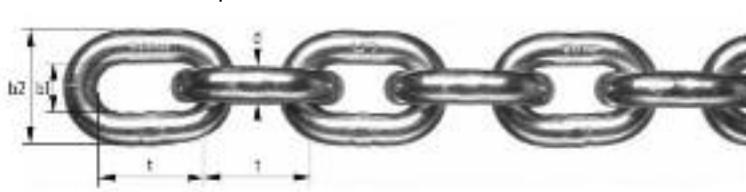
Dee Shackle

## Stainless Steel chain AISI 316 L Grade 60, similar DIN 5687-1

#	Code	Dimensions / mm				Weight	W.L.L	Breaking Force
		d	t	b1 min.	b2 max.	ca.kg/m	t	kN
*	KW-105515EP (G50)	5.0	15.0	6.5	18.5	0.54	0.50	20
	KW-CK6	6.0	18.0	7.8	22.2	0.80	0.90	36
	KW-CK7	7.0	21.0	9.1	25.9	1.10	1.20	48
	KW-CK8	8.0	24.0	10.4	29.6	1.40	1.50	60
	KW-CK10	10.0	30.0	13.0	37.0	2.20	2.40	96
	KW-CK13	13.0	39.0	16.9	48.1	3.80	3.85	154
	KW-105616BK (G50)	16.0	48.0	20.8	59.2	5.70	5.00	200
*	KW-CK18 (G50)	18.0	54.0	24.3	64.8	7.30	7.00	280

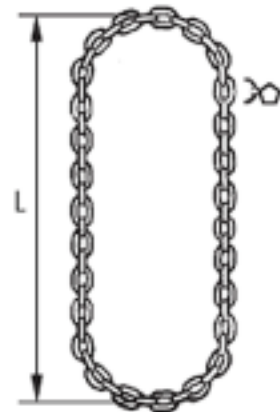
#Note: G50 stock will be replaced with G60. Please check when ordering.

\* - 05mm & 18mm available on request.



Stainless Steel endless chain Grade 60

Chain	W.L.L /Vert	W.L.L	W.L.L	
		90 deg	120 deg	
Code	d/mm	t	t	t
KW-CELK6	6	1.80	1.25	1.00
KW-CELK7	7	2.40	1.65	1.35
KW-CELK8	8	3.00	2.10	1.65
KW-CELK10	10	4.80	3.35	2.70
KW-CELK13	13	7.70	5.40	4.30
KW-CELK16	16	10.00	7.00	5.60



\* - Endless chain available on request. KW-CELK16 is G50

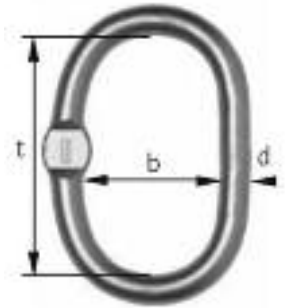
Work Load Limit (in dependence of chain temperature)

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 60 for 1- and 2- leg slings

				dimensions mm			Weight
Chain Size							
Code	WLL (t)	1-leg	2-leg	d	t	b	ca kg
KW-CAGF13	1.5	6/7/8	6	13	110	60	0.340
KW-CAGF16	2.4	10	7/8	16	110	60	0.530
KW-CAGF18	3.35	-	10	18	135	75	0.800
KW-CAGF22	6.0	13/16	13	22	160	90	1.500
KW-CAGF26	8.0	18	13	26	180	100	2.300
KW-CAGF32	12.0	-	18	32	200	110	3.900



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

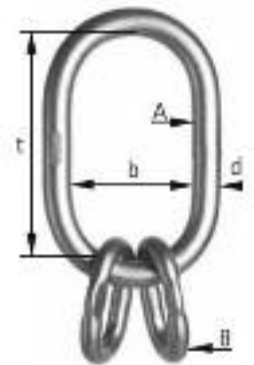
				dimensions mm			Weight
Chain Size							
Code	WLL (t)	1-leg	2-leg	d	t	b	ca kg
KW-177626BK	5.0	16	13	26	180	100	2.300

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

Note: G50 stock will be replaced with G60. Please check when ordering.

## For 3- and 4- leg slings. Grade 50

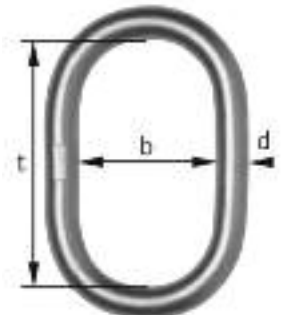
		W.L.L (t)		dimensions mm				Weight
Code	Chain	90 degrees	120 degrees	d	t	b	ca.kg	
KW-178618BK	6/7	1.60	1.00	A18 B13	135 54	75 25	1.20	
KW-178622BK	8	1.70	1.25	A22 B16	160 70	90 34	2.30	
KW-178626BK	10	2.80	2.00	A26 B18	180 85	100 40	3.56	
KW-178632BK	13	4.50	3.20	A32 A22	200 115	110 50	6.05	
KW-178636BK	16	7.00	5.00	A36 B26	260 140	140 65	10.00	



Note: G50 stock will be replaced with G60. Please check when ordering.

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

				dimensions mm			Weight
Code	W.L.L	1-leg	2-leg	d	t	b	ca kg
KW-177510BK	0.50	5	-	10	80	50	0.150
KW-177513BK	1.00	6/7	6	13	110	60	0.340
KW-177516BK	1.25	8	7	16	110	60	0.530



Note: G50 stock will be replaced with G60. Please check when ordering.

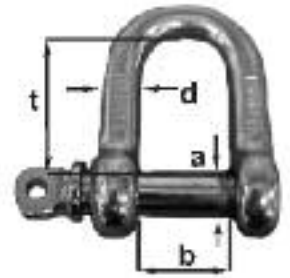
## Stainless Steel master links, CAG Grade 60 1 and 2 -leg, sand blasted

	W.L.L (t)	1-leg	2-leg	d	t	b	ca kg
KW-CAG10	0.60	5	4	10	80	50	0.150
KW-CAG13	1.50	6/7/8	5/6	13	110	60	0.340
KW-CAG16	2.40	10	7/8	16	110	60	0.530
KW-CAG18	3.35	-	10	18	135	75	0.800
KW-CAG22	6.00	13/16	13	22	160	90	1.500
KW-CAG26	8.00	16	16	26	180	100	2.300
KW-CAG32	12.00	18	18	32	200	110	3.900
KW-CAG36	16.00	20	20	36	260	140	6.350

\* Available on request.

## Stainless Steel Dee shackles Type NSA, Grade 50

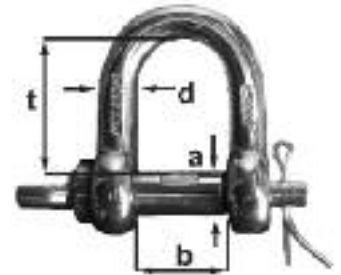
		W.L.L	dimensions mm				Weight
Code	MATERIAL	t	a	d	t	b	ca. kg
KW-CSA05	AISI 316	0.50	9	8	24	17	0.070
KW-CSA06	AISI 316	0.75	11	10	35	20	0.135
KW-CSA08	AISI 316	1.25	13	12	42	25	0.220
KW-CSA10	AISI 316	2.00	18	16	64	32	0.510
# KW-CSA13	AISI 316	3.20	21	19	76	38	0.910
# KW-184616EP	17/4 PH	5.00	19	16	64	32	0.550
KW-CSA18	17/4 PH	6.30	22	19	76	38	1.00
KW-184620BK	17/4 PH	9.00	26	22	88	44	1.900
* KW-CSA22	17/4 PH	11.00	29	25	102	51	2.900
* KW-CSA26	17/4 PH	13.00	32	29	114	57	3,100
* KW-CSA27	17/4 PH	15.00	35	32	128	64	4.300
* KW-CSA28	17/4 PH	18.00	38	35	140	70	5.300



\* Available on request.

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

		W.L.L	dimensions mm				Weight
Code	Type	t	a	d	t	b	ca. kg
KW-185604EP	AISI 316	0.30	7	6	23	12	0.035
KW-185605EP	AISI 316	0.50	9	8	24	17	0.070
KW-185606EP	AISI 316	0.75	11	10	35	20	0.135
KW-CSS08	AISI 316	1.25	13	12	42	25	0.225
KW-185610EP	AISI 316	2.00	18	16	64	32	0.540
KW-185613EP	AISI 316	3.20	21	19	76	38	0.945



Note: Codes are subject to change when new stock arrives. Please check at time of order.

## Stainless Steel clevis shackle Type NGS, Grade 60 AISI 316 L

		W.L.L	dimensions mm			Weight
Code	Material	t	t	b	a	ca. kg
KW-CGS06	AISI 318LN	0.90	26	20	7	0.160
KW-CGS07/08	AISI 318LN	1.50	30	23	9	0.230
KW-CGS10	AISI 318LN	2.40	40	28	11	0.460
KW-CGS13	AISI 318LN	3.85	48	38	14	0.675
KW-199616GB G50	AISI 318LN	5.00	50	44	17	1.130



## Stainless Steel identification tag

Code	Combination tag for single - leg and multiple - leg sling	Weight
KW-IDTAG	ID tag without W.L.L marking	0.100
KW-CHECKTAG	Check tag, tag rope & ferrule*	0.070



Identification tag



Check tag

\* Check tag marked with years for next inspection.

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



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

		W.L.L	dimensions mm				Weight
Code	Type	t	t	g	h	ca. kg	
KW-CGHF06 (G60)	NGHF 06	0.9	78	25	22	0.400	
KW-CGHF07/08 (G60)	NGHF 08	1.50	97	32	28	0.760	
# KW-176610GB	NGHF 10	2.00	121	41	34	1.440	
# KW-176613GB	NGHF 13	3.20	143	48	47	2.600	
KW-176616GB	NGHF 16	5.00	180	69	57	4.900	



# Note: G50 stock will be replaced with G60. Please check when ordering.

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

Code	Type	t	t	g	b	h	ca. kg
* KW-COHF04	NOHF 04	0.35	75	20	17	17	0.185
KW-COHF05/06 (G60)	NOHF 06	0.75	100	25	25	22	0.350
# KW-175608GB	NOHF 08	1.25	126	32	27	28	0.790
# KW-175610GB	NOHF 10	2.00	160	39	37	34	1.370
# KW-175613GB	NOHF 13	3.20	190	51	48	45	3.000
* KW-COHF16	COHF 16	5.00	230	66	55	51	4.800
* KW-COHF18	COHF 18	7.00	230	66	55	51	4.800



\* Available on request.

# Note: G50 stock will be replaced with G60. Please check when ordering.

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
Code		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
Code		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



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

		W.L.L	dimensions mm			Weight
Code	Type	t	a	b	t	ca. kg
KW-194606	NV 06	0.75	47	10	81	0.180
KW-194608	NV 08	1.25	70	12	94	0.380
KW-194610	NV 10	2.00	80	15	120	0.710
KW-194613	NV 13	3.20	91	20	150	1.180
KW-194616	NV 16	5.00	100	21	175	2.300



**Note: G50 stock will be replaced with G60. Please check when ordering.**

## Stainless Steel weld on lifting point

		W.L.L	dimensions mm			Weight
Code	Type	t	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



**Note: G50 stock will be replaced with G60. Please check when ordering.**

## Swivel Lifting Eye Screws

Code	type	t	a	b	c	Thread	ca. kg
KW-CDS05	CDS 05	0.5	44.0	12.5	29.5	M12 X 22	0.20
KW-CDS1	CDS 1	1.0	49.5	14.0	32.5	M 16 x 25	0.31
KW-CDS2	CDS 2	2.0	58.5	16.0	40.0	M 20 X 33	0.52
KW-CDS25	CDS 25	2.5	71.0	20.0	48.0	M24 X 39	1.00



- Turnable 360° at entire fastening and hence adjustable in any necessary direction of loading.
- Flattened section at the ring to enable combination with CGS.
- Angle marks with indication (45°) at the back side.
- High fatigue resistance due to a forged ring-body.
- Ring-body and screw part are 100 % crack detected.
- The W.L.L. at worst case is indicated at the ring-body and clearly visible.
- Tested acc. EN 1677-1, quadruple safety against breakage.
- Screw part secured at ring-body to prevent its loss.
- Very high resistance against corrosion of all parts ensured by duplex material 1.4462 (AISI 316LN).

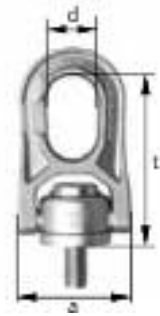


**Attention:**  
Before using the  
CDS carefully  
study the instructions.



## Swivel Lifting Eye Screws

Code	type	t	a	b	c	Thread	ca. kg
KW-CDAWM14	CDAW M 14	1.00	68.0	98.5	31.0	M14 X 26	0.49
KW-CDAWM16	CDAW M 16	1.25	68.0	98.5	31.0	M16 x 26	0.50
KW-CDAWM20	CDAW M 20	1.50	68.0	98.5	31.0	M 20 X 30	0.51



- 360° rotation and adjustable in any loading direction
- Flattened section for combination with CGS
- Angle marks with indication (45°) on back
- High fatigue-resistance through forged ring-body
- Ring-body and screw are fracture tested using advanced detection technologies
- W.L.L minimum clearly indicated on ring-body
- Tested acc EN 1677-1, quadruple protection against breakage
- Screw secured at ring-body to prevent loss
- Duplex material (AISI 318LN) ensures superior corrosion resistance



### *Cromox Pump Lifting Chains, Stainless*



Extremely variable

Cromox Pump lifting chains in our reliable quality for lifting and lowering of pumps and aeration devices for water and sewage are being tested piece by piece. They are equipped as standard with a WLLtag and certificate.

Besides our standard models other variations are possible:

- 2-leg model for pumps with 2 lifting points
- alternative end-fittings, for instance eye hooks or shackles
- differing from the standard segment lengths other distances are possible
- special constructions





### *Cromox Hoist Lifting Equipment, Stainless*



#### **Hoist Lifting Chains and Swivel Load Hooks in excellent Quality**

Hoist Lifting Chains and Swivel Load Hooks by Ketten Wälдер manufactured in Cromox-quality are characterized by high dimensional accuracy and close tolerances. We specially value good run properties therefore our Hoist Lifting Chains are in-house manufactured "Made in Germany". A certificate ensures the excellent quality.

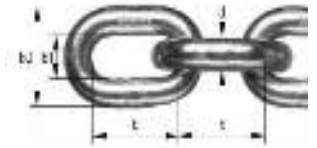
## Hoist Lifting Chains & Load Rated Hooks.



Cromox Hoist Lifting Chains and Swivel Load Hooks in excellent Quality Hoist Lifting Chains and Swivel Load Hooks by Ketten Walder are of excellent quality, being characterised by high dimensional accuracy and close tolerances. In order to ensure superior run properties they are manufactured "in house" in Germany. A certificate is issued as an assurance of quality.

### Exact measures and constant quality

- In-house production "Made in Germany"
- Tested with inspection certificate
- Calibrated acc.to DIN 5684
- Materials: Grade 60:1.4404 (AISI 316L)
- Measures according to customer requirements



Hoist Lifting Chains CHK Grade 60 *similar to DIN 5684, tested, calibrated, bright polished*

Code	Type	Type	W.L.L		Dimensions mm				Weight	Breaking Force
			a	b	d	t	b1 min.	b2 max.	ca. kg	kN
KW-CHK4120	CHK	4.0 x 12.0	0.40	0.32	4.0	12.0	5.0	13.7	0.350	16.0
KW-CHK4123	CHK	4.0 x 12.3	0.40	0.32	4.0	12.3	5.0	13.7	0.350	16.0
KW-CHK5150	CHK	5.0 x 15.0	0.63	0.50	5.0	15.0	6.0	16.9	0.540	25.0
KW-CHK5151	CHK	5.0 x 15.1	0.63	0.50	5.0	15.1	6.3	17.0	0.540	25.0
KW-CHK5153	CHK	5.0 x 15.3	0.63	0.50	5.0	15.3	6.0	16.8	0.540	25.0
KW-CHK6180	CHK	6.0 x 18.0	0.90	0.75	6.0	18.0	7.2	20.2	0.800	37.5
KW-CHK63131	CHK	6.3 x 13.1	1.00	0.80	6.3	19.1	7.9	21.4	0.860	40.0
KW-CHK7210	CHK	7.0 x 21.0	1.25	1.00	7.0	21.0	8.4	23.6	1.100	50.0
KW-CHK7220	CHK	7.0 x 22.0	1.25	1.00	7.0	22.0	8.4	23.0	1.100	50.0
KW-CHK71212	CHK	7.1 x 21.2	1.25	1.00	7.1	21.2	8.8	23.6	1.120	50.0
KW-CHK8240	CHK	8.0 x 24.0	1.60	1.25	8.0	24.0	9.6	27.0	1.400	63.0
KW-CHK8242	CHK	8.0 x 24.2	1.60	1.25	8.0	24.2	9.6	27.0	1.400	63.0
KW-CHK9270	CHK	9.0 x 27.0	2.00	1.60	9.0	27.0	10.8	30.4	1.800	80.0
KW-CHK10280	CHK	10.0 x 28.0	2.50	2.00	10.0	28.0	12.0	34.0	2.200	100.0
KW-CHK10300	CHK	10.0 x 30.0	2.50	2.00	10.0	30.0	12.5	34.0	2.200	100.0
KW-NHC5250	NHC	5.0 x 25.0	-	-	5.0	25.0	7.0	17.4	0.450	-
KW-NHC5252	NHC	5.0 x 25.2	-	-	5.0	25.2	7.0	17.4	0.450	-

a = Hand Driven SF 4:1

b = Motor Driven class 1 Bm SF 5:1

## Swivel Load Hooks

Swivel Load Hooks CWHF, Grade 60 *for direct connection to the chain*

Code	Type	Fitting Chain		W.L.L	Dimensions	Weight
		mm		t	g	ca. kg
KW-CWHF40	CWHF 40	4 x 12 / 12.1 / 12.3		0.40	20	0.450
KW-CWHF43	CWHF 43	4.3 x 12		0.40	20	0.450
KW-CWHF50	CWHF 50	5 x 15 / 15.1 / 15.3		0.63	20	0.450
KW-CWHF60	CWHF 60	6 x 18 / 16.7		0.90	25	1.100
KW-CWHF63	CWHF 63	6.3 x 19.1		1.00	25	1.100
KW-CWHF70	CWHF 70	7 x 21 / 22		1.25	25	1.100
KW-CWHF71	CWHF 71	7.1 x 20.5 / 21.2		1.25	25	1.100



### Advantages

- Very high resistance against corrosion because of best material (Duplex AISI 318 LN)
- Easily swivels under full load (ball bearings made of stainless steel AISI 440C)
- Specially matched to fit for hoists and lifting chains of various manufacturers.
- Highest grade of Stainless Steel sector - grade 60
- High working loads and safety factors
- Perfect handling by solid design
- The hooks design proven for many years
- Certificate EN 10204-3.1 available with order







## *Cromox Nautic, Stainless*



### **Anchorchains and Forerun Chains**

Cromox anchorchains and forerun chains for the highest requirements upto material considered seawater resistant with a designated PREvalue.

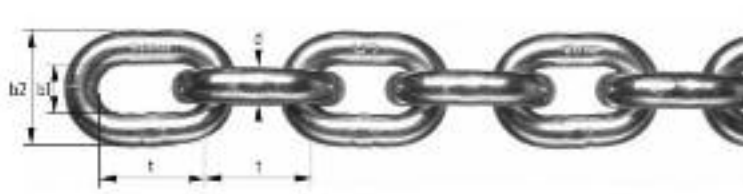
- Approximately double breaking force of a chain made of duplex steel 1.4462 in comparison to a hot-dip galvanized Grade 30 chain
- Material with an increased PREvalue are in particular suitable for the usage in warmer regions
- High weight savings, important for multihull boats
- Extremely long life cycle
- Extremely smooth running
- No "piling" inside the anchorchest
- Very good price/performance ratio

## Anchor Chains

Cromox Anchor Chains Grade 50 *similar to ISO 4565, AISI 316L, bright polished*

Code	Dimensions				Weight	BreakingForce
	d	t	b1 min	b2 max	kg	kN
* KW-CIA6	6	18.0	8.1	21.6	0.800	30
KW-CIA8	8	24.0	10.8	28.8	1.360	50
* KW-CIA10	10	30.0	13.5	36.0	2.200	80

\* Available on request



Cromox Anchor Chains Grade 60 *similar to DIN 766, Duplex AISI 318LN, bright polished*

Code	Dimensions				Weight	BreakingForce
	d	t	b1 min	b2 max	kg	kN
* KW-CXA6	6	18.5	7.2	20.8	0.750	36
* KW-CXA8	8	24.0	9.6	27.2	1.350	63
KW-CXA10	10	28.0	12.0	36.0	2.250	100
* KW-CXA13	13	36.0	15.6	47.0	3.900	165

\* Available on request

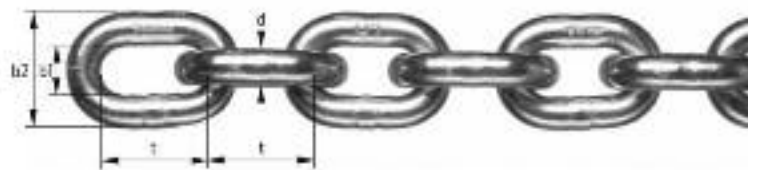




## Conveyer Chains

Conveyer chains CKG, Grade *tested calibrated, bright polished*

Code	Type	Minimum breaking force	dimensions mm				Weight
		kN	d	t	b1 min	b2 max	kg
KW-CFK6275	CFK 6 X 27.5	36	6	27.5	8.80	21.20	0.680
KW-CFK8254	CFK 8 X 25.4	60	8	25.4	8.90	25.90	1.280
KW-CFK8310	CFK 8 X 31.0	60	8	31.0	10.40	28.00	1.260
KW-CFK9310	CFK 9 X 31.0	80	9	31.0	11.70	31.50	1.650
KW-CFK10310	CFK 10 X 31.0	96	10	31.0	12.50	34.00	2.200
KW-CFK10350	CFK 10 X 35.0	96	10	35.0	12.50	34.00	2.100
KW-CFK13450	CFK 13 X 45.0	154	13	45.0	16.30	44.20	3.500



Although the present catalogue contained current information at the time of print, some data may have changed in the meantime! Therefore, Bridco reserve the right to make technical changes without prior notice.

Further information and prices on request.



# Distributors throughout



Australia

and



New Zealand

Cromox is a product sold exclusively by NATA certified distributors. Bridco have NATA certified distributors across Australia and New Zealand who can help with your Cromox enquiries.

**For details of your nearest supplier please call Bridco direct.**

**Telephone: (07) 55 935 688 Fax (07) 55 935 872**

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