GUNNEBO
Product Catalog 2017

2017

Product Catalog

Strength Through Innovation Since 1764

GUNNEBO Industries

About Gunnebo Industries

In 1764 a mr Hans Hultman got approval from the Swedish king to set up a forge to manufacture nails and bolts for ship-making and that's where the story of Gunnebo Industries begins. The business became successful and soon expanded to include iron smelting with charcoal and a wrought iron factory. Today our chain factory is still located only steps away from where it all started.

Over the years Gunnebo Industries have lead the development in the industry in a number of ways. For an example we were one of the first in the world, in 1906, to use electric welding for chain manufacturing, which made the chain stronger and more reliable and soon became the standard procedure world-wide.

Product- and manufacturing development has always been a corner stone in our foundation and it's a re-occurring theme in the company's line of history. An example is the coupling link G – an invention by Gunnebo Industries that revolutionized the lifting industry where welded slings had been the only option. This opened up possibilities in the industry that had not existed before.

Other inventions by Gunnebo Industries are: the self-locking hook (BK), the electrically insulated roller-bearing swivel, the Universal Welding hook and - of course – the unique GrabiQ system. GrabiQ is a grade 10, all-inclusive system, with integrated shortening functions designed to make rigging and lifting safer, more efficient and user-friendly. Again Gunnebo Industries changed the conditions for lifting to something new and better that the world had not seen before.

Today we are truly global, having our head office in Sweden, manufacturing units in Sweden, Norway and USA; sales companies in ten countries spread out on all continents. More than that, through our extensive distributor network covering more than 50 countries, Gunnebo Industries' products are readily available all over the world.

WARNING:
Failure to read, understand and comply with the following instructions, working load limits and specifications in this publication may result in serious injury or damage to property.

Where there is growth and development in the world...

...Gunnebo Industries products can be found.

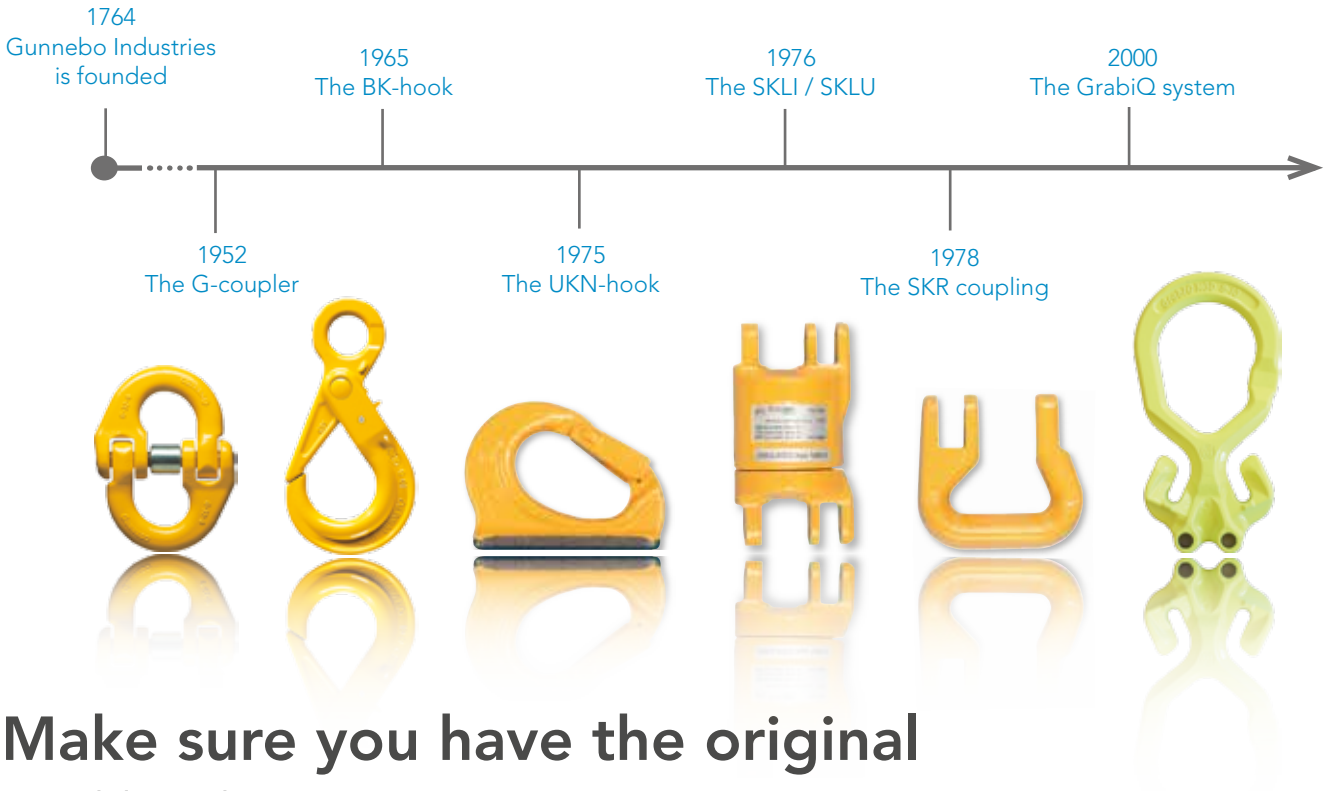
GUNNEBO
Industries

Company Information and Services

Gunnebo Industries - A History of Innovation

In 1764 counsellor Hans Hultman founded Gunnebo Industries in the shape of a hammer-smithy in Småland, Sweden. Today we are an international corporation, well known in many industries all over the world.

Gunnebo Industries continuously works with product development and innovations to create the optimal solutions for each lifting situation. Since the early 1950's we have developed products that are today's standards on the market and copied by almost all manufacturers of lifting equipment. There is however only one original - Gunnebo Industries. With the original you get the perfect fit and smart details.



Make sure you have the original

Traceability code

The traceability code consists of letters and numbers that identifies exactly which plant the product was made in, the year and the batch. This gives us the ability to trace the product back through the manufacturing process, all the way back to the specific raw material.

Approved by BG / DGUV

Our products have the H32-stamp which means they are manufactured in accordance with the rules of Berufsgenossenschaft (BG). This ensures a product that contributes to the safest possible working environment for both personnel and the load.

Flat section

The flat section makes it compatible with our GrabiQ and Classic range.

Manufacturer name

All our forged components are marked with "Gunnebo Sweden".

Component type, size and grade

The size and grade is clearly marked on each component, to avoid errors and ensures correct matching of chain and components

Recessed trigger

To avoid the trigger from being struck or damaged, it has been recessed into the hook. This also helps to prevent the latch from accidentally opening.

About Our Products

Gunnebo Industries - GrabiQ

Gunnebo Industries has been responsible for many of the technological advances in lifting products throughout its history. We have an on-going commitment to constantly investigate new ideas that will make safer, quicker, easier and more cost effective lifting solutions possible. Our GrabiQ Grade 100 range features integral shortening, reduced number of components and more flexible use of chain slings. This provides a modular concept that covers a wide set of applications.

Chain and Lifting Components

Our chain and components are made from special quenched and tempered alloy steel. This guarantees very high strength, low weight, high wear resistance and long life. All lifting components are uniformly marked with equivalent chain size, grade, manufacture's designation and name for positive identification and each individual component and chain link is tested to the Manufacturing Proof Force (MPF) before delivery.

Shackles and Rigging Screws

Gunnebo Industries has its own factory for the production of shackles and rigging screws. The factory is located outside Bergen in Norway and is Scandinavia's leading producer of these products. Parts of our shackle range are Type Approved to DNV 2.7-1.

Johnson Products

Johnson Blocks – a name recognized by industries worldwide as a mark of uncompromising excellence. An extensive product line, including e.g. snatch blocks, crane blocks, overhaul balls and sockets. Rigid controls on high quality make our products the standard of choice. All products are manufactured in our own factory in Tulsa, Oklahoma, USA.

Polyester Lifting & Lashing

Gunnebo Industries offers complete lifting and lashing solutions in the soft product assortment. We have the patented RH-hook, a one piece solution that connects straight on to the roundsling, giving the user the most efficient solution with maximum flexibility and operational efficiency. Gunnebo Industries has an extensive quality control of soft products that guarantees that they are following current standards and regulations.

Certificates

Gunnebo Industrier AB have environmental and quality management approved to ISO 14001:2015 and ISO 9001:2015 as well as a number of different 3rd party certificates.

Gunnebo Industries - Global Presence

Sales Offices in 10 countries - Distributors in more than 50 additional countries

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Our Production Plants

As Manufacturer we have:

- Full control of the process - from raw material to finished product
- Two forging plants
- Our own production facilities for chain manufacturing
- Our own production facilities for all components and master links
- Our own production facilities for shackles and rigging screws
- Our own production facilities for blocks & sheaves
- All products tested and inspected down to the smallest detail

Quality Assurance

- Automatic weld checks
- Calibration checks
- Bend test of chain
- Elongation test of chain
- Measurement of breaking load of chain and components
- Magnaflux inspection of chain and components
- Visual inspection
- Removal of blemishes that can have an impact on the strength
- 100 % proof load of each component and every link of chain

Gunnebo Industries Training System

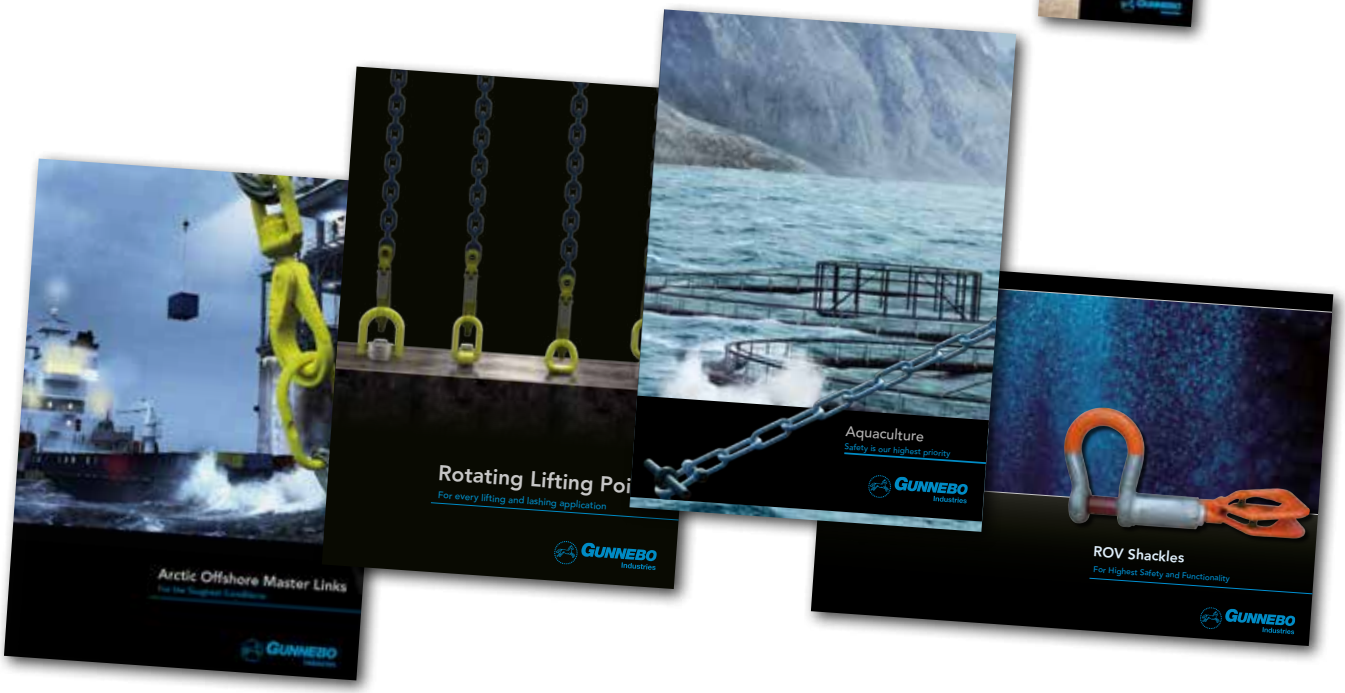
Knowledge Lifts Loads Off Your Mind

We want to ensure that you have safe and correct handling of our products. In order to do so, we have developed a number of customer training programs. The courses are presented by our highly qualified staff in our Training Centre in Sweden.

We offer a range of training sessions that will increase both your knowledge of our products and how to handle them safely and correctly, as well as give you sales hints on selling in a very competitive market.

Our technical courses will not only help to create a safer working environment, but also increase the life span of our products.

After successful completion of the course, each participant will receive a Certificate, detailing the knowledge achieved, and a Gunnebo Industries Pocket Manual.



Target groups for Gunnebo Industries courses are:

- Gunnebo Industries distributors
- Purchasing personnel
- Safety personnel
- Rigging supervisors

Training Courses

Technical Training		
Level 1	1 day	• Company Information • Current relevant legislation • Lifting equipment selection • Sling configuration including the GrabiQ System • Gunnebo Johnson Products • Shackle Program
Level 2	2 days	• More detailed Level 1 information • Safe Use of Lifting Equipment • Gunnebo Manufacturing Process • Practical Handling and Sling Assembly

Sales Training		
	Half day	• Company Information • Sales Training • Sales Promotion Methods • Practical Tips on Technical Sales

Training Locations

- Gunnebo Industries Training Centre, Sweden
- Gunnebo Industries Global Subsidiaries
- Gunnebo Industries Main Distributor Centres
- On-site at Suitable Training Centres

Post Course Information Service

All participants can also avail of technical advice and information from instructor for a period of 12 months after completion of the course.

Course Dates and Schedules

For more information and course dates, please contact us at export@gunneboindustries.com or contact any of our sales teams.

Sling Components

Grade 10 • Offshore • Grade 8

GrabiQ

Offshore

Classic

Spare Parts

Technical Information

WARNING:
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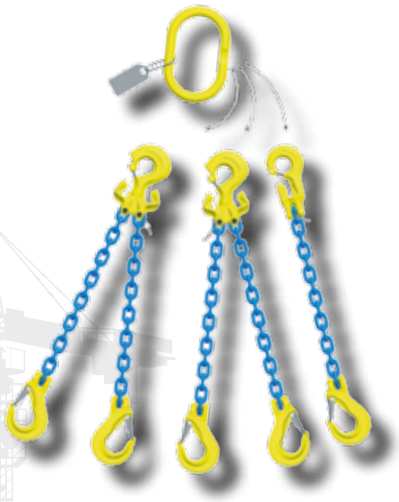
engcon

The Flexible and Cost Efficient Chain Sling System.

GrabiQ stands for:

- "Grab" - Built in shortening function allows the user to instantly adjust the chain sling.
- IQ - Intelligent design gives more efficient lifts, making the user more successful.
- IO - Grade 10 material gives 25% added strength as well as lighter slings.
- i - Innovation has been and still is one of our driving forces. Many of our products are unique on the market and are protected by patents.
- Q - Quality. No product leaves our factories without being proof loaded and visually inspected, so that we can guarantee top quality to all customers



GrabiQ offers:

Cost Efficiency

GrabiQ has been designed to integrate multiple functions in each component. This means fewer components in each sling, but with the same and even better function than the old system. A good example of this is our FlexiLeg system, where one master link combined with one 1-leg sling and two 2-leg sling units, completely replaces four master links and ten legs of chain sling. Read more about FlexiLeg on page 2:6.

Flexibility in Field

We understand how fast the conditions for a lift can change and we also recognize that time is money in lifting operations - big and small. With the GrabiQ system we have included functions that would otherwise demand additional products or a complete change of chain sling. The user gets a quicker and more ergonomic lifting operation each time when using the GrabiQ system.

Reduce the Cost - Increase the Efficiency

The GrabIQ system makes your lift quicker, safer and easier

The all-inclusive chain sling system for coupling, shortening and lifting in grade 10 is designed to improve your lifting actions and make it as quick and easy as possible. Some of the top features are:

- Less components - cost efficient
- Built in shortening function
- Light weight for better ergonomics

4-leg sling with shortening function

Only 3 GrabiQ components

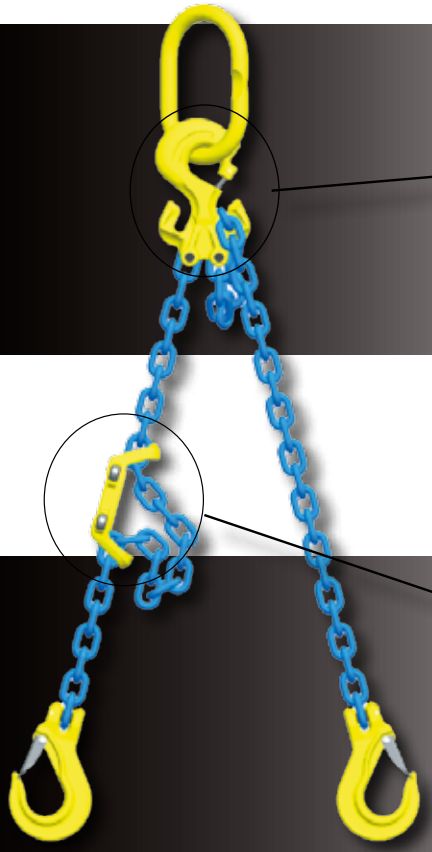
Used to be 15 components

2-leg sling with shortening function

Only 1 GrabiQ component

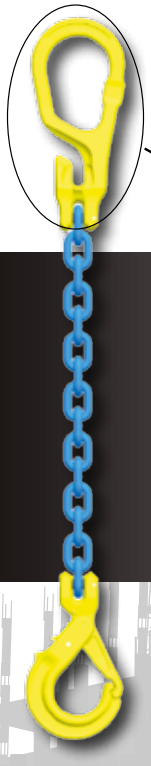
Used to be 7 components

Designed for Flexibility and Efficiency



The C-grab duo, CGD, has a built in shortening function. For technical specification, see page 2:14.

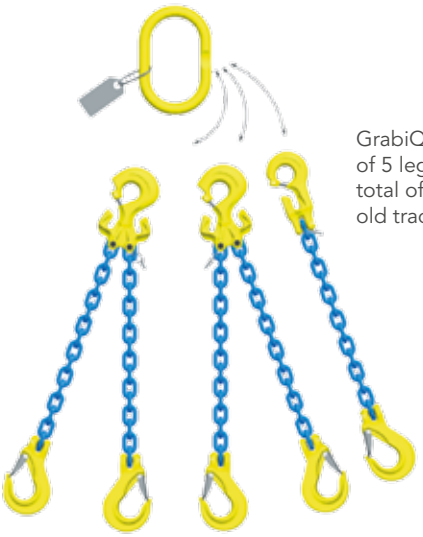
The Midgrab, MIG, offers instant mounting, positioning and shortening on any part of the chain. See page 2:10 for technical specification.



With the "all-in-one" compact top link, MG, every chain leg can instantly be altered. Using the built in shortening function you can alter between a straight lift to a looped sling in a matter of seconds For technical specification, see page 2:13.

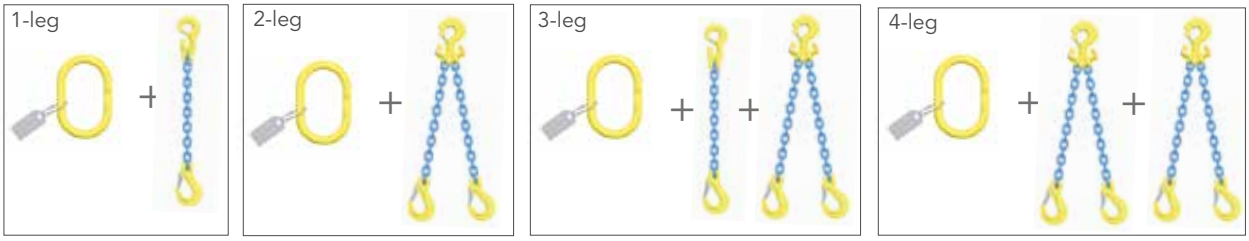
Less is More with *FlexiLeg™*

FlexiLeg is a solution that allows you to have an instant leg change. One single master link and a combination of five legs replace four complete slings, a total of ten legs, with the traditional system. By using the unique features of the GrabiQ range, Gunnebo Industries has increased the flexibility even further.



GrabiQ FlexiLeg – a total of 5 legs replaces the total of 10 legs with the old traditional system.

Old system - 10 legs in 4 separate chain slings.

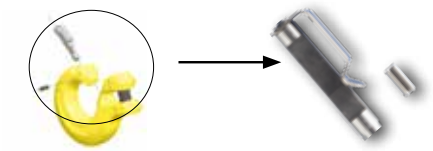


Why do you want instant leg-change?

- It will enable the user to change slings, leg by leg, which will make it lighter and easier to work with.
- Sling legs that are not being used can easily be removed, thereby increasing safety at the work site.
- The quantity of sling material is greatly reduced, providing cost savings.
- The chain sling can be rebuilt on site, thus increasing efficiency.

Art. no.	Code	WLL in tonnes*		
		1-leg	2-leg	3- & 4-leg
Z101050	FlexiLeg GBK 6 mm L= 2 m	1.5	2.1	3.15
Z101051	FlexiLeg EGKN 6 mm L= 2 m	1.5	2.1	3.15
Z101052	FlexiLeg GBK 8 mm L= 2 m	2.5	3.5	5.2
Z101053	FlexiLeg EGKN 8 mm L= 2 m	2.5	3.5	5.2
Z101054	FlexiLeg GBK 10 mm L= 2 m	4.0	5.6	8.4
Z101055	FlexiLeg EGKN 10 mm L= 2 m	4.0	5.6	8.4
Z101056	FlexiLeg GBK 13 mm L= 2 m	6.7	9.5	14
Z101057	FlexiLeg EGKN 13 mm L= 2 m	6.7	9.5	14
Z101058	FlexiLeg GBK 16 mm L= 2 m	10	14	21
Z101059	FlexiLeg EGKN 16 mm L= 2 m	10	14	21

Related products



QuickPin - For safe exchange of sling legs

- Fits all C-components! (CL, CLD, CG, CGD)
- Has instant close/open function, no tools needed!
- Easy to retro-fit!
- Made of stainless steel for long product life span.

FlexiTag - For every GrabiQ sling

- Specially designed for FlexiLeg
- Fits all other GrabiQ slings
- WLL and chain size pre-stamped for 1 - 4 legs
- Leg angle 45/60 degree shown in contour
- Made of stainless steel for use in all weather conditions.

* For different lifting angles - see WLL table page 2:8.

Safety factor 4:1

Chain Sling Solutions

1-leg Chain Slings

MG1-GBK
Consist of: Master link MG, Chain KLA, Safety Hook GBK

Dim. mm	WLL t*	Total Components length, mm
6	1.5	171
8	2.5	296
10	4.0	361
13	6.7	453
16	10.0	527

MG1-EGKN
Type: Master link MG, Chain KLA, Hook with latch EGKN

Dim. mm	WLL t*	Total Components length, mm
6	1.5	231
8	2.5	261
10	4.0	331
13	6.7	408
16	10	481

TG1-GBK
Master link MF, C-grab CG, Chain KLA, Safety Hook GBK

Dim. mm	WLL t*	Total Components length, mm
6	1.5	200
8	2.5	346
10	4.0	424
13	6.7	504
16	10.0	621

TG1-EGKN
Consists of: Master link MF, C-grab CG, Chain KLA, Hook with latch EGKN

Dim. mm	WLL t*	Total Components length, mm
6	1.5	286
8	2.5	342
10	4.0	415
13	6.7	507
16	10.0	624

2-leg Chain Sling

MGD2-EGKN
Consists of: Master link MGD, Chain KLA, Latch Hook EGKN

Dim. mm	WLL tonnes* ß 0-45° α 0-90°	WLL tonnes* ß 45-60° α 90-120°	Total Components length, mm
6	2.1	1.5	230
8	3.5	2.5	261
10	5.6	4.0	331
13	9.5	6.7	408
16	14.0	10.0	481

MGD2-GBK
Consists of: Master link MGD, Chain KLA, Safety Hook GBK

Dim. mm	WLL tonnes* ß 0-45° α 0-90°	WLL tonnes* ß 45-60° α 90-120°	Total Components length, mm
6	2.1	1.5	235
8	3.5	2.5	296
10	5.6	4.0	361
13	9.5	6.7	453
16	14.0	10.0	527

TG2-GBK
Consists of: Master link MF, C-grab Duo CGD, Chain KLA, Safety Hook GBK

Dim. mm	WLL t* ß 0-45° α 0-90°	WLL t* ß 45-60° α 90-120°	Total Components length, mm
6	2.1	1.5	291
8	3.5	2.5	366
10	5.6	4.0	444
13	9.5	6.7	534
16	14.0	10.0	671

TG2-EGKN
Consists of: Master link MF, C-grab Duo CGD, Chain KLA, Latch Hook EGKN

Dim. mm	WLL t* ß 0-45° α 0-90°	WLL t* ß 45-60° α 90-120°	Total Components length, mm
6	2.1	1.5	286
8	3.5	2.5	342
10	5.6	4.0	415
13	9.5	6.7	507
16	14.0	10.0	625

MGD2-CL
Consists of: Master link MGD, Chain KLA, C-lok CL

Dim. mm	WLL t* ß 0-45° α 0-90°	WLL t* ß 45-60° α 90-120°	WLL choked t* ß 0-45° α 0-90°	WLL choked t* ß 45-60° α 90-120°	Total Components length, mm
6	2.1	1.5	1.6	1.2	187
8	3.5	2.5	2.7	2.0	230
10	5.6	4	4.4	3.2	285
13	9.5	6.7	7.4	5.4	359
16	14.0	10.0	11.0	8.0	429

*Safety factor 4:1

3-leg Chain Sling

TG3-GBK
Consists of: Master link MF, C-grab CG, C-grab Duo CGD, Chain KLA, Safety Hook GBK

Dim. mm	WLL t* ß 0-45° α 0-90°	WLL t* ß 45-60° α 90-120°	Total component length mm
6	3.1	2.2	311
8	5.2	3.7	392
10	8.4	6.0	474
13	14.0	10.0	604
16	21.0	15.0	680

TG3-EGKN
Consists of: Master link MF, C-grab CG, C-grab Duo CGD, Chain KLA, Latch Hook EGKN

Dim. mm	WLL t* ß 0-45° α 0-90°	WLL t* ß 45-60° α 90-120°	Total Component length mm
6	3.1	2.2	306
8	5.2	3.7	357
10	8.4	6.0	444
13	14.0	10.0	559
16	21.0	15.0	634

4-leg Chain Sling

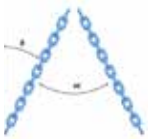
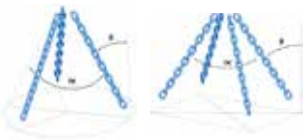
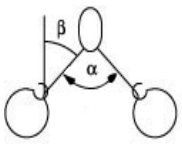
TG4-GBK
Consists of: Master link MF, C-grab Duo CGD, Chain KLA, Safety Hook GBK

Dim. mm	WLL t* ß 0-45° α 0-90°	WLL t* ß 45-60° α 90-120°	Total Component length mm
6	3.1	2.2	311
8	5.2	3.7	392
10	8.4	6.0	474
13	14.0	10.0	604
16	21.0	15.0	680

TG4-EGKN
Consists of: Master link MF, C-grab Duo CGD, Chain KLA, Latch Hook EGKN

Dim. mm	WLL t* ß 0-45° α 0-90°	WLL t* ß 45-60° α 90-120°	Total Component length mm
6	3.1	2.2	306
8	5.2	3.7	357
10	8.4	6.0	444
13	14.0	10.0	559
16	21.0	15.0	634

WLL in tonnes, Grade 10 GrabiQ

1-leg		2-leg		3- & 4-leg		Choke hitch	
							
Chain dim.		ß 0-45° α 0-90°	ß 45-60° α 90-120°	ß 0-45° α 0-90°	ß 45-60° α 90-120°	ß 0-45° α 0-90°	ß 45-60° α 90-120°
6	1.5	2.1	1.5	3.15	2.2	1.6	1.2
7	2.0	2.8	2.0	4.2	3.0	2.2	1.6
8	2.5	3.5	2.5	5.2	3.7	2.7	2.0
10	4.0	5.6	4.0	8.4	6.0	4.4	3.2
13	6.7	9.5	6.7	14.0	10.0	7.4	5.3
16	10.0	14.0	10.0	21.0	15.0	11.0	8.0
20	16.0	22.4	16.0	33.6	24.0	17.6	12.8
22	20.0	28.0	20.0	42.0	30.0	22.0	16.0
26	27.0	38.2	27.0	57.3	40.5	29.7	21.6
32	40.0	56.0	40.0	84.0	60.0	44.0	32.0

Safety factor 4:1. Working load limits are based upon equally loaded and disposed sling legs.

*Safety factor 4:1

Pre-Assembled Chain Sling

"GrabiQ-in-a-box" - ready to use at arrival

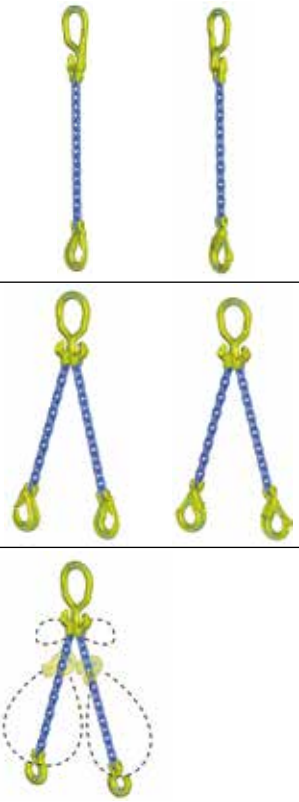
Gunnebo Industries offers the perfect retail solution - pre-assembled chain slings with information tags, supplied with certificate, packed in boxes. Ready to be used the instant they arrive.

GrabiQ chain sling benefits:

- 25% additional strength in the new grade 10 which gives lighter lifting slings.
- All top assemblies consist of no more than three components.
- Shortening function of chain legs is integral with no extra components.

Technical Specification

Art. no.	Code	WLL tonnes*	Length m	Choked WLL	Weight kgs
B790110	MG1-GBK-6-10	1.5	2	-	4.1
B790111	MG1-GBK-8-10	2.5	3	-	6.4
B790112	MG1-GBK-10-10	4.0	3	-	10.1
B790120	MG1-EGKN-6-10	1.5	2	-	2.8
B790121	MG1-EGKN-8-10	2.5	3	-	6
B790122	MG1-EGKN-10-10	4.0	3	-	9.7
B790220	MG2-EGKN-6-10	2.1	2	-	7.1
B790221	MG2-EGKN-8-10	3.5	3	-	11.7
B790222	MG2-EGKN-10-10	5.6	3	-	17.6
B790210	MG2-GBK-6-10	2.1	2	-	7.3
B790211	MG2-GBK-8-10	3.5	3	-	12.3
B790212	MG2-GBK-10-10	5.6	3	-	18.9
B790130	MG2-CL-6 -10	2.1	6	1.6	12.4
B790131	MG2-CL-8-10	3.5	6	2.7	21.8
B790132	MG2-CL-10-10	5.6	6	4.4	34.9



6 mm FlexiLeg

Pre-Assembled

Art. no.	Code	Weight kgs
Z101016	FlexiLeg FMG 221 GBK 6 mm L= 2 m	13.8
Z101017	FlexiLeg FMG 221 EGKN 6 mm L= 2 m	13.3

Midgrab Chain Shortener, MIG

Product Features

- Instant mounting and positioning on any part of the chain.
- Shortening in either chain direction; up-down.
- Designed to prevent inadvertent chain disengagement.
- Can be set idle on the chain leg when shortening is not required.
- LC version offers secure mounting with locking set on any desired part of the chain with one chain direction open for shortening.
- CC version offers close-open function in both chain directions for safe retention of the chain.

Locking Devices for Midgrab MIG

Note! The MIG should be used with at least one locking devices.

L - fixed locking set

For fixed mounting

Code:

L-8: B14905
L-10: B14915
L-13: B14917

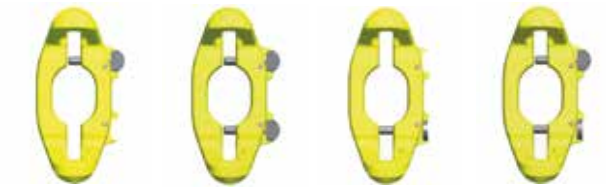
C - close/open locking set

Spring operated locking device. Can be placed either in open or closed position.

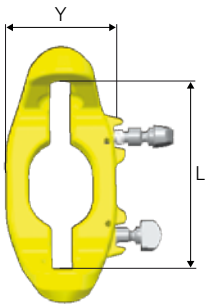
Code:

C-8: B14904
C-10: B14914
C-13: B14916

Product Code Guide - Locking options

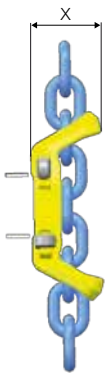


MIG C | MIG CC | MIG L | MIG LC



MIG with C pins

Art. no.	Code	WLL tonnes*	L	X	Y	Weight kgs
B14303	MIG CC-8-10	2.5	95	50	60	0.7
B14313	MIG CC-10-10	4.0	125	70	77	1.1
B14323	MIG CC-13-10	6.7	150	90	80	2.6



MIG without pins

Art. no.	Code	WLL tonnes*	L	X	Y	Weight kgs
B14300	MIG-8-10	2.5	95	50	60	0.6
B14310	MIG-10-10	4.0	125	70	77	1.0
B14320	MIG-13-10	6.7	150	90	80	2.5

*Safety factor 4:1

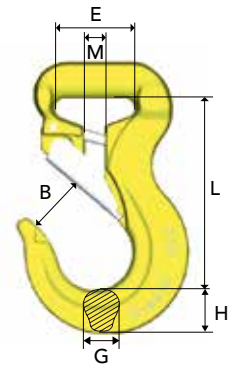
All dimensions in mm

Roundsling Hook RH

The RH-hook is the perfect load connection solution, combining the advantages of both soft lifting slings and grade 100 components. It can be inserted into a softsling and is quicker and safer to use than the commonly used shackle. The RH-hook is a connector as well as a hook, which gives the user increased flexibility, safer use and increased durability of the soft slings.

The RH-hook comes with a blocking pin, but thanks to the narrow opening it may be used without blocking pin.

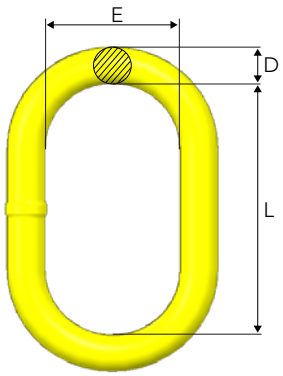
The roundsling hooks are colour coded in order to match the corresponding size of the roundsling:
Red=5T / Yellow=3T / Green=2T / Violet=1T



Art. no.	Code	WLL tonnes*	B	E	G	L	H	M	Weight kgs
B14490	RH-1-10	1	24	35	16.6	84	19	8	0.5
B14491	RH-2-10	2	28	40	17	96	22	10	0.7
B14492	RH-3-10	3	33	47	24	117	30	12	1.3
B14493	RH-5-10	5	43	73	27	155	36	16.5	3.2

Master Link M

Art. no.	Code	WLL tonnes (SF 5:1)		L	E	D	Weight kgs
		EN 1677-4	A-952/A952M ASME B30.26				
Z101271	M-6-10	1.5	1.5	100	60	11	0.2
Z101272	M-86-10	2.5	3.2	125	70	14	0.4
Z101273	M-108-10	4.0	5.2	140	80	17	0.8
Z101274	M-13-10	5.4	5.6	150	90	19	1.0
Z101267	M-1310-10	7.5	8.0	160	95	22	1.5
Z101268	M-1613-10	10.0	13.6	190	110	28	2.8
Z101247	M-19-10	12.0	16.0	200	120	30	3.5
Z101269	M-2016-10	17.0	20.6	240	140	34	5.2
Z101270	M-2220-10	25.0	30.9	250	150	40	7.3
Z101275	M-2622-10	28.0	32.0	250	150	42	8.7
Z101284	M-32-10	33.0	38.6	300	180	45	11.7
Z101276	M-3226-10	43.0	46.6	300	200	50	14.8
Z101277	M-3632-10	56.0	65.0	350	200	55	20.7
Z101278	M-4536-10	70.0	72.7	375	210	60	26.4
Z101279	M-90T-10	90.0	100.0	450	250	70	42.8
Z101280	M-125T-10**	125.0	125.0	450	260	80	57.0



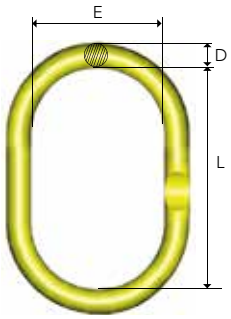
** Dimension L and E not acc. to EN 1677-4.

*Safety factor 4:1

All dimensions in mm

Master Link MF

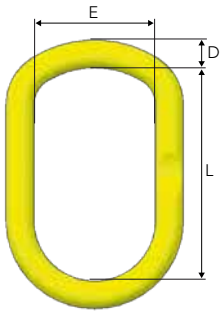
For 1-, 2-, 3- and 4-leg slings. **3- and 4 leg chain slings require CLD / CGD**



Art. no.	Code	WLL tonnes (SF 5:1)		For chain size, mm			L	E	D	Weight kgs
		EN 1677-4	A-952/A952M ASME B30.26	1-leg	2-leg	3-4-leg				
B14487	MF-6-10	1.5	1.5	6			100	60	11	0.2
B14481	MF-86-10	2.5	3.2	6, 8	6	-	125	70	14	0.4
B14482	MF-108-10	4.0	5.2	10	8	6	140	80	17	0.8
B14483	MF-1310-10	7.5	8.0	13	10	8	160	95	22	1.5
B14484	MF-1613-10	10.0	13.6	16	13	10	190	110	28	2.8
B14485	MF-2016-10	17.0	20.6	20	16	13	240	140	34	5.2
B14486	MF-2220-10	25.0	30.9	22	20	16	250	150	40	7.3

Master Link MFH

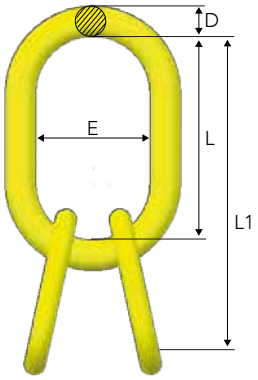
Designed for crane hooks, DIN 15401. **3- and 4 leg chain slings require CLD / CGD**

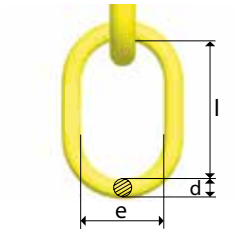


Art. no.	Code	WLL tonnes (SF 5:1)		For chain size, mm			L	E	D	DIN 15401	DIN 15402	Weight kgs
		EN 1677-4	A-952/A952M ASME B30.26	1-leg	2-leg	3-4 leg						
Z101262	MFH-1310-10	7.5	8.0	13	10	8	230	125	22	≤ 12	≤ 16	1.9
Z101263	MFH-1613-10	10.0	13.6	16	13	10	250	135	28	≤ 12	≤ 16	3.2
Z101264	MFH-2016-10	17.0	20.6	20	16	13	280	135	32	≤ 16	≤ 20	4.6
Z101265	MFH-2220-10	28.0	30.9	22	20	16	320	175	40	≤ 25	≤ 32	8.6
Z101266	MFHW-2220-10	25.0	25.0	22	20	16	355	225	40	≤ 50	≤ 63	9.9

Master Link with Sublinks, MT

Designed for use with chain or wire rope. For 3- and 4-leg slings





Art. no.	Code	WLL tonnes (SF 5:1)		L1	L	E	D	l	e	d	Weight kgs
		EN 1677-4	A-952/A952M ASME B30.26								
Z100902	MT-6-10	3.5	5.0	270	150	90	19	120	70	14	1.8
Z100903	MT-8-10	5.2	8.0	300	160	95	22	140	80	17	3.0
Z101359	MT-9-10	6.9	9.7	340	190	110	28	150	90	19	4.9
Z100904	MT-10-10	11.5	16.0	360	200	120	30	160	95	22	6.4
Z100905	MT-13-10	17.0	26.0	440	250	150	40	190	110	28	14.2
Z100906	MT-16-10	28.0	35.0	500	300	200	50	200	120	32	23
Z101074	MT-20-10	35.0	50.0	550	300	200	55	250	150	40	31.5
Z101281	MT-22-10	53.0	75.0	610	350	200	60	260	140	45	46
Z101282	MT-26-10	70.0	100.0	730	450	250	70	280	160	50	71
Z101283	MT-32-10	90.0	125.0	730	450	260	80	280	160	55	91

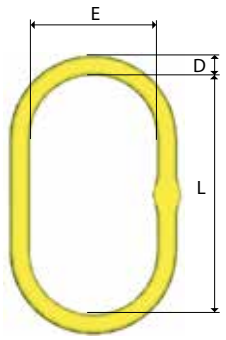
All dimensions in mm

Master Link, MFX

Oversized, for 1- and 2-leg slings

Art. no.	Code	WLL tonnes (SF 5:1)		For chain 1-leg	For chain 2-leg	L	E	D	Weight kgs
		EN 1677-4	A-952/A952M ASME B30.26						
Z100550	MFX-108-10	4.25	5.2	8, 10	8	340	180	25	3.7
Z100551	MFX-1310-10	7.5	8.0	13	10	340	180	28	4.7
Z100552	MFX-1613-10	11.2	13.6	16	13	340	180	34	7.1
Z101125	MFX-2016-10	16.0	20.6	20	16	340	180	40	9.6

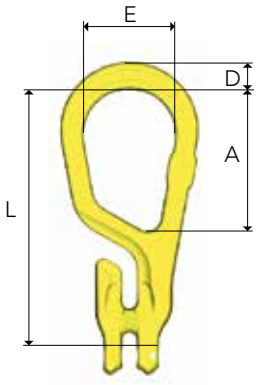
Designed for use with CL, CLD, CG and CGD.



Master Grab MG

"All-in-one" compact top link

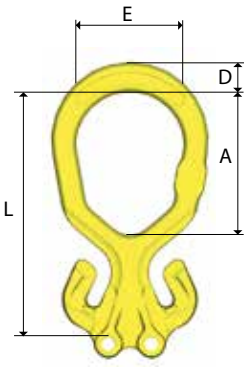
Art. no.	Code	WLL tonnes*	L	A	E	D	Weight kgs
B14710	MG-6-10	1.5	145	88	60	15	0.5
B14711	MG-8-10	2.5	171	92	60	18	0.9
B14712	MG-10-10	4.0	211	113	75	22	1.8
B14713	MG-13-10	6.7	261	138	90	26	3.5
B14714	MG-16-10	10.0	311	157	105	31	6.1



Master Grab Duo MGD

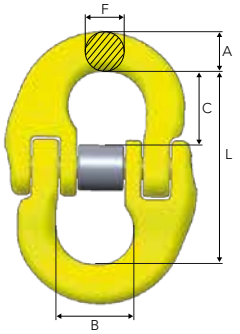
"All-in-one" compact top link for 2-leg slings

Art. no.	Code	WLL tonnes*	L	A	E	D	Weight kgs
B14700	MGD-6-10	2.1	144	90	60	17	0.7
B14701	MGD-8-10	3.5	171	100	75	21	1.3
B14702	MGD-10-10	5.6	211	124	90	24	2.3
B14703	MGD-13-10	9.5	262	149	105	31	5.2
B14704	MGD-16-10	14.0	310	175	120	35	7.9



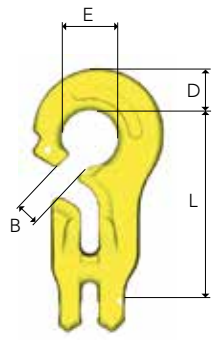
Coupling Link G

Art. no.	Code	WLL tonnes*	L	B	F	A	C	Weight kgs
Z100821	G-6-10	1.5	45	15	7	8	16	0.1
Z101358	G-7-10	2.0	56	18	9	11	22	0.2
Z100822	G-8-10	2.5	56	18	9	11	22	0.2
Z100823	G-10-10	4.0	68	25	12	13	26	0.3
Z100824	G-13-10	6.7	89	29	15	17	33	0.7
Z100825	G-16-10	10.0	106	36	19	20	40	1.4
Z101119	G-20-10	16.0	125	43	23	26	44	2.2
Z101339	G-22-10	20.0	152	50	26	28	59	3.5
Z101365	G-26-10	27.0	161	58	32	34	61	5.7
Z101666	G-32-10	40.0	200	70	38	40	77	9.5



*Safety factor 4:1

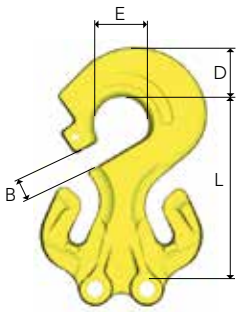
All dimensions in mm



C-Grab CG

For use with master link, eye hooks and choke

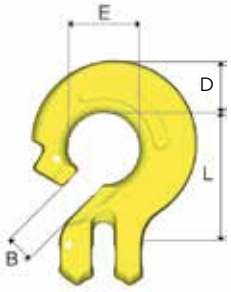
Art. no.	Code	WLL tonnes*	L	B	E	D	Weight kgs
B14730	CG-6-10	1.5	80	11	24	19	0.3
B14731	CG-8-10	2.5	107	12	32	24	0.7
B14732	CG-10-10	4.0	134	15	40	29	1.5
B14733	CG-13-10	6.7	172	18	52	38	3.2
B14734	CG-16-10	10.0	215	22	64	47	6.1



C-Grab CGD

For use with master links

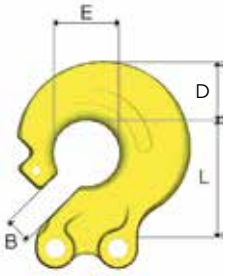
Art. no.	Code	WLL tonnes*	L	B	E	D	Weight kgs
B14720	CGD-6-10	2.1	79	11	24	20	0.6
B14721	CGD-8-10	3.5	107	12	32	29	1.1
B14722	CGD-10-10	5.6	134	15	40	37	2.2
B14723	CGD-13-10	9.5	173	19	48	48	5.4
B14724	CGD-16-10	14.0	215	22	64	57	9.1



C-Lok CL

For use with master links, eye hooks and choke

Art. no.	Code	WLL tonnes*	L	B	E	D	Weight kgs
B14750	CL-6-10	1.5	43	11	24	18	0.2
B14751	CL-8-10	2.5	58	12	32	24	0.5
B14752	CL-10-10	4.0	74	15	40	29	1.0
B14753	CL-13-10	6.7	94	18	52	38	2.0
B14754	CL-16-10	10.0	119	22	64	48	3.8



C-Lok CLD

For use with master links

Art. no.	Code	WLL tonnes*	L	B	E	D	Weight kgs
B14740	CLD-6-10	2.1	43	11	24	22	0.4
B14741	CLD-8-10	3.5	58	12	32	29	0.6
B14742	CLD-10-10	5.6	74	15	40	37	1.2
B14743	CLD-13-10	9.5	94	18	52	46	3.1
B14744	CLD-16-10	14.0	119	25	64	57	5.5

*Safety factor 4:1

All dimensions in mm

Chain, GrabiQ Grade 10 (200)

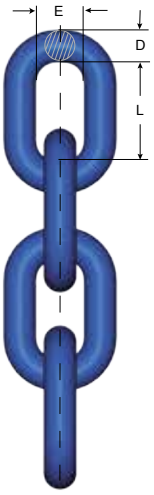
Short link, KL

Heat treatment

Quenched and tempered.
Note! For chain grade 10 (200) the maximum in service temperature is 200°C.

Surface treatment

Painted blue



Art. no. Box	Code	WLL tonnes	D nom. mm	L » mm	E » mm	Weight kgs/m	MPF kN	Breaking force kN
Z802300 - 1 x 200 m	KLA 6-10	1.5	6	18	8	0.8	36.8	58.8
Z802337 - 1 x 200 m	KLA 7-10	2.0	7	21	10	1.1	48	77
Z802301 - 1 x 200 m	KLA 8-10	2.5	8	24	11	1.4	63	102
Z802302 - 1 x 100 m	KLA 10-10	4.0	10	30	14	2.3	98	158
Z802303 - 1 x 100 m	KLA 13-10	6.7	13	39	18	3.8	166	268
Z802304 - 1 x 100 m	KLA 16-10	10.0	16	48	22	5.6	251	402
Z802305 - 1 x 50 m	KLA 20-10	16.0	20	60	29	9.4	393	630
Z802246 - 1 x 50 m	KLA 22-10	20.0	22	66	31	11.8	491	785
Z802248 - 1 x 50 m	KLA 26-10	27.0	26	78	37	14.6	664	1062
Z802440 - 1 x 25 m	KLA 32-10	40.0	32	96	43	24.4	1006	1610

Chain, GrabiQ Grade 10 (400)

Short link, KL

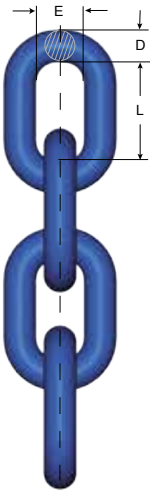
Heat treatment

Quenched and tempered.
Note! For chain grade 10 (400) the maximum in service temperature is 400°C.

Surface treatment

Painted blue

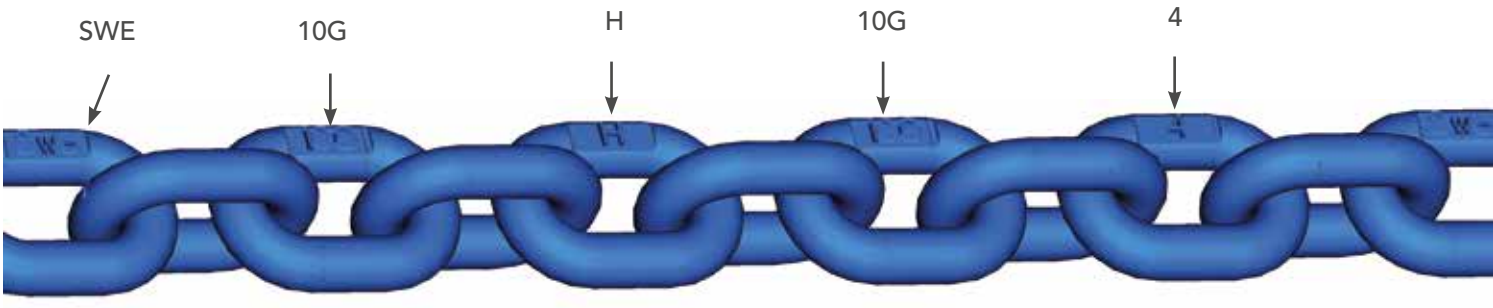
Note: This chain is marked with "8+" in addition to the marking required by the machine directive



Art. no. Box	Code	WLL tonnes	D nom. mm	L » mm	E » mm	Weight kgs/m	MPF kN	Breaking force kN
Z802306 - 1 x 200 m	KLA 6-10 (400)	1.5	6.6	18	8.9	1.0	36.8	58.8
Z802307 - 1 x 200 m	KLA 8-10 (400)	2.5	8.8	24	11.2	1.7	63	102
Z802308 - 1 x 100 m	KLA 10-10 (400)	4.0	11.0	30	14.4	2.6	98	158
Z802309 - 1 x 100 m	KLA 13-10 (400)	6.7	14.3	39	19.2	4.5	166	268
Z802310 - 1 x 100 m	KLA 16-10 (400)	10.0	17.3	48	23.0	6.7	251	402

For larger sizes, see GrabiQ Grade 10 (200) or Classic Grade 8.

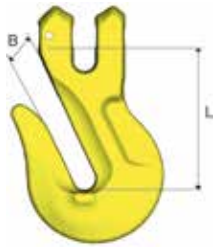
Marking and Traceability of Gunnebo Industries Chain



*Safety factor 4:1

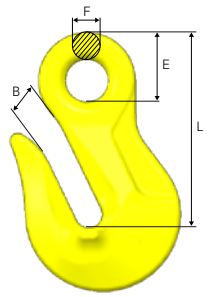
All dimensions in mm

Grab Hook GG



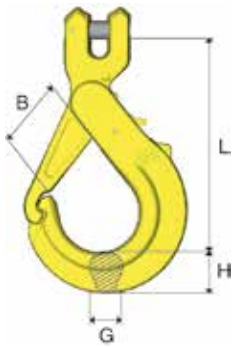
Art. no.	Code	WLL tonnes*	L	B	Weight kgs
Z100845	GG-7-10	2.0	57	10	0.3
B14771	GG-8-10	2.5	57	10.5	0.4
B14772	GG-10-10	4.0	76	12	0.9
B14773	GG-13-10	6.7	97	16	1.8
B14774	GG-16-10	10.0	124	20	3.1
Z101152	GG-20-10	16.0	147	26	7.0

Grab Hook OG



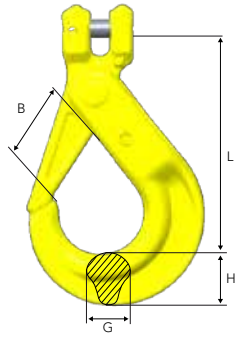
Art. no.	Code	WLL tonnes*	L	B	E	F	Weight kgs
Z101296	OG-7/8-10	2.5	65	10.5	17	10	0.3
Z101297	OG-10-10	4.0	85	12	20	12	0.7
Z101298	OG-13-10	6.7	104	16.2	26	16	1.6
Z101299	OG-16-10	10.0	131	20	32	19	2.8
Z101300	OG-20-10	16.0	167	26.4	41	23	6.1
Z101301	OG-22-10	20.0	187	26	46	32	8.6
Z101302	OG-26-10	27.0	228	32	55	38	14

Safety Hook GBK



Art. no.	Code	WLL tonnes*	L	B	G	H	Weight kgs
Z100758	GBK-6-10	1.5	87	26	15	17	0.4
Z100849	GBK-7-10	2.0	114	36	20	22	0.5
Z100759	GBK-8-10	2.5	119	36	20	22	0.8
Z100760	GBK-10-10	4.0	150	47	22	29	1.4
Z100761	GBK-13-10	6.7	172	53	29	38	2.7
Z100762	GBK-16-10	10.0	208	68	30	45	4.4

Safety Hook BKG



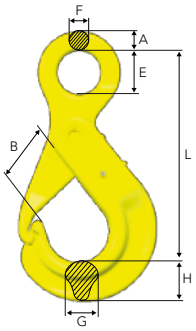
Art. no.	Code	WLL tonnes*	L	B	G	H	Weight kgs
Z101110	BKG-6-10	1.5	91	29	15	21	0.5
Z101098	BKG-7-10	2.0	120	37	17	22	0.5
Z101100	BKG-8-10	2.5	121	37	17	26	0.9
Z101026	BKG-10-10	4.0	144	45	21	31	1.5
Z101034	BKG-13-10	6.7	180	55	30	40	3.0
Z101042	BKG-16-10	10.0	219	62	37	50	5.5
Z101091	BKG-20-10	16.0	240	68	44	62	9.6

*Safety factor 4:1

All dimensions in mm

Safety Hook OBK

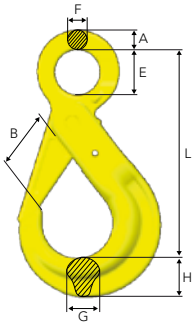
Art. no.	Code	WLL tonnes*	A	L	B	E	F	G	H	Weight kgs
Z101048	OBK-6-10	1.5	12	103	26	22	9	15	17	0.4
Z101143	OBK-7/8-10	2.5	14	139	37	28	10	20	22	0.8
Z101145	OBK-10-10	4.0	16	170	47	34	13	22	29	1.3
Z101147	OBK-13-10	6.7	21	206	53	44	15	29	38	2.6
Z101141	OBK-16-10	10.0	26	251	68	56	19	29	45	4.4
Z101240	OBK-18/20-10	16.0	28	293	74	60	22	44	56	7.3



Safety Hook BK

Art. no.	Code	WLL tonnes*	A	L	B	E	F	G	H	Weight kgs
Z101108	BK-6-10	1.5	12	109	29	22	10	15	21	0.5
Z101097	BK-7/8-10	2.5	14	138	37	28	11	17	26	0.9
Z101024	BK-10-10	4.0	16	168	45	34	13	21	31	1.5
Z101032	BK-13-10	6.7	20	207	55	44	16	30	40	3.0
Z101040	BK-16-10	10.0	26	254	62	56	20	37	50	5.5
Z101089	BK-18/20-10	16.0	30	289	68	60	22	44	64	9.0
Z101325	BK-22-10	20.0	32	320	80	70	24	50	64	11.3
Z101326	BK-26-10	27.0	35	342	100	80	25	54	68	16.5

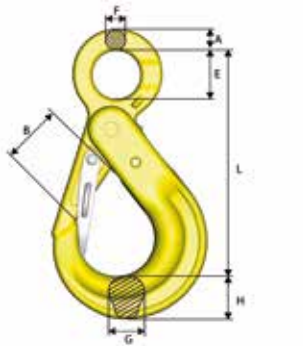
For larger sizes, see Classic Grade 8



Safety Hook BKD

The double latch BK-hook with recessed trigger

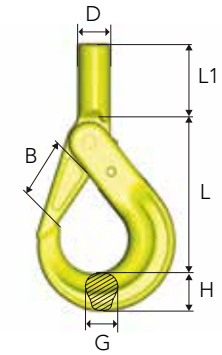
Art. no.	Code	WLL tonnes*	A	L	B	E	F	G	H	Weight kgs
Z101154	BKD-13-10	6.7	20	207	44	44	16	30	40	3.2
Z101155	BKD-16-10	10.0	26	254	48	56	20	37	50	5.8
Z101156	BKD-18/20-10	16.0	30	289	57	60	22	44	62	9.1
Z101373	BKD-26-10 OS	27.0	35	342	72	80	25	54	68	16.8



Shank Safety Hook BKT

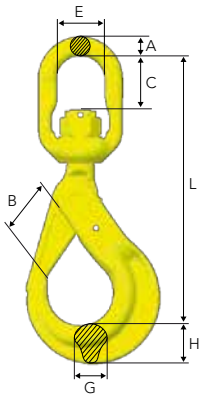
Art. no.	Code	WLL tonnes*	L	B	L1	D	dmin	G	H	Weight kgs
Z1011120	BKT-6-10	1.5	90	29	36	20	11	15	21	0.5
Z1011020	BKT-7/8-10	2.5	111	37	47	24	13	17	26	0.9
Z1010690	BKT-10-10	4.0	133	45	51	29	16	21	31	1.6

d min = the smallest permitted shank dimension after machining.
Note! After machining of the shank, proof loading must be carried out.



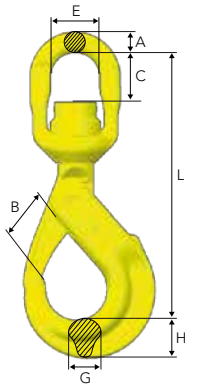
*Safety factor 4:1

All dimensions in mm



Swivel Safety Hook BKL

Art. no.	Code	WLL tonnes*	L	B	C	E	A	G	H	Weight kgs
Z101114	BKL-6-10	1.5	149	29	23	33	11	15	21	0.7
Z101104	BKL-7/8-10	2.5	183	37	27	38	12	17	26	1.2
Z101028	BKL-10-10	4.0	218	45	37	44	15	21	31	2.0
Z101036	BKL-13-10	6.7	282	55	49	48	19	30	40	4.0
Z101044	BKL-16-10	10.0	341	62	65	61	25	37	50	7.2
Z101093	BKL-18/20-10	16.0	368	68	70	72	31	44	62	11.4

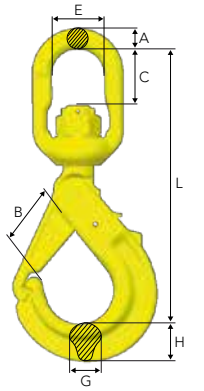


Swivel Safety Hook BKLK

with ball-bearing

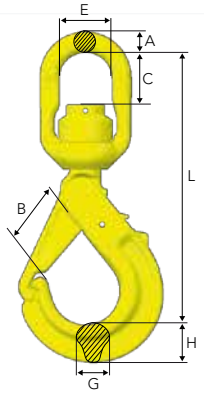
Art. no.	Code	WLL tonnes*	L	B	C	E	A	G	H	Weight kgs
Z101116	BKLK-6-10	1.5	149	29	24	33	11	15	21	0.7
Z101106	BKLK-7/8-10	2.5	183	37	27	38	12	17	26	1.2
Z101030	BKLK-10-10	4.0	218	45	35	44	15	21	31	2.0
Z101038	BKLK-13-10	6.7	280	55	45	48	19	30	40	4.0
Z101046	BKLK-16-10	10.0	339	62	62	61	25	37	50	7.3
Z101095	BKLK-18/20-10	16.0	368	68	60	72	31	44	62	11.5
Z101294	BKLK-22-10 OS	20.0	436	79	80	80	35	50	62	16.8
Z101295	BKLK-26-10 OS	27.0	486	100	110	102	45	54	68	26

For larger sizes, see Classic Grade 8



Swivel Safety Hook with Griplatch LBK

Art. no.	Code	WLL tonnes*	L	B	C	E	A	G	H	Weight kgs
Z100978	LBK-7/8-10	2.5	177	37	27	38	12	20	22	1.1
Z100960	LBK-10-10	4.0	214	47	37	44	15	22	29	1.8
Z100993	LBK-13-10	6.7	262	53	45	48	19	29	38	3.5
Z100995	LBK-16-10	10.0	324	68	66	61	25	30	45	5.9



Swivel Safety Hook with Griplatch LKBK

with ball-bearing

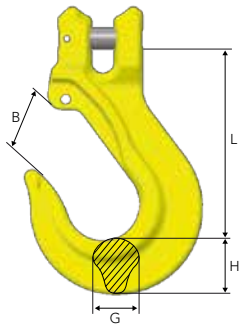
Art. no.	Code	WLL tonnes*	L	B	C	E	A	G	H	Weight kgs
Z100980	LKBK-7/8-10	2.5	176	37	27	38	12	20	22	1.1
Z100962	LKBK-10-10	4.0	213	47	35	44	15	22	29	1.9
Z100997	LKBK-13-10	6.7	261	53	43	48	19	29	38	3.6
Z100999	LKBK-16-10	10.0	323	68	61	61	25	30	45	6.2

*Safety factor 4:1

All dimensions in mm

Sling Hook EGK

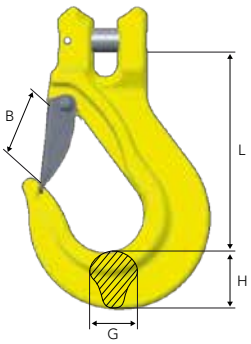
Art. no.	Code	WLL tonnes*	L	B	G	H	Weight kgs
Z100915	EGK-6-10	1.5	86	28	17	20	0.4
Z100918	EGK-7-10	2.0	95	32	17	22	0.5
Z100938	EGK-8-10	2.5	95	32	17	23	0.5
Z100942	EGK-10-10	4.0	121	41	23	31	1.0
Z100946	EGK-13-10	6.7	145	49	28	38	2.0
Z100950	EGK-16-10	10.0	170	61	36	46	3.8
Z101138	EGK-20-10	16.0	209	70	42	60	7.3



Sling Hook EGKN

with latch

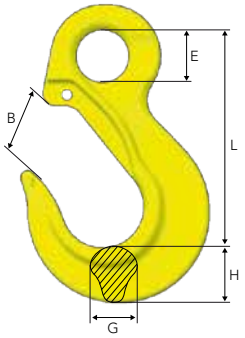
Art. no.	Code	WLL tonnes*	L	B	G	H	Weight kgs
B14460	EGKN-6-10	1.5	86	24,5	17	20	0.4
Z100843	EGKN-7-10	2.0	95	27	17	23	0.5
B14461	EGKN-8-10	2.5	95	28	17	23	0.5
B14462	EGKN-10-10	4.0	121	35	23	31	1.1
B14463	EGKN-13-10	6.7	145	42	28	38	2.2
B14464	EGKN-16-10	10.0	170	53	36	46	4.0
Z101127	EGKN-20-10	16.0	209	65	42	60	7.6



Sling Hook EK

Art. no.	Code	WLL tonnes*	L	B	E	F	G	H	Weight kgs
Z101162	EK- 6-10	1.5	94	29	22	10	17	20	0.4
Z101164	EK- 7/8-10	2.5	109	32	28	12	17	23	0.5
Z101166	EK-10-10	4.0	134	42	34	14	23	30	0.9
Z101168	EK-13-10	6.7	166	49	44	18	28	38	2.0
Z101170	EK-16-10	10.0	203	60	56	22	36	47	3.8
Z101306	EK-20-10	16.0	229	71	61	26	42	60	6.3
Z101307	EK-22-10	20.0	267	83	64	31	43	67	8.5
Z101308	EK-26-10	27.0	301	95	66	32	51	75	12.6

For larger sizes, see Classic Grade 8

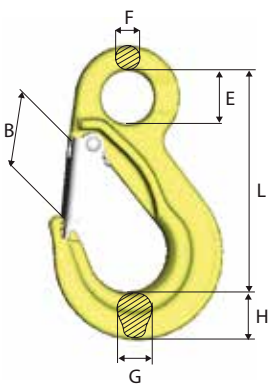


Sling Hook EKN

with latch

Art. no.	Code	WLL tonnes*	L	B	E	F	G	H	Weight kgs
Z101128	EKN- 6-10	1.5	94	24	22	10	17	20	0.4
Z101130	EKN- 7/8-10	2.5	108	28	28	12	17	23	0.5
Z101132	EKN-10-10	4.0	134	37	34	14	23	30	1
Z101134	EKN-13-10	6.7	166	42	44	18	28	38	2.1
Z101136	EKN-16-10	10.0	203	50	56	22	36	47	3.9
Z101327	EKN-20-10	16.0	229	60	61	26	42	60	6.3
Z101328	EKN-22-10	20.0	267	73	64	31	43	67	8.7
Z101329	EKN-26-10	27.0	301	82	66	32	51	75	13.2

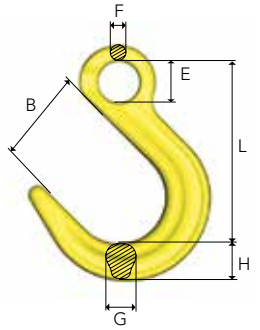
For larger sizes, see Classic Grade 8



*Safety factor 4:1

All dimensions in mm

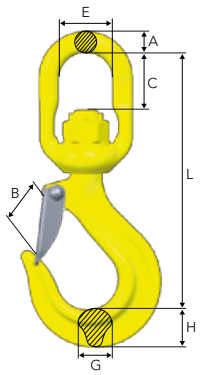
Foundry Hook OKE



Art. no.	Code	WLL tonnes*	L	B	E	F	G	H	Weight kgs
Z100853	OKE-7/8-10	2.5	124	63	28	12	21	26	0.8
Z100854	OKE-10-10	4.0	151	76	34	15	26	30	1.4
Z100855	OKE-13-10	6.7	184	90	44	19	33	39	2.8
Z100898	OKE-16-10	10.0	218	102	56	23	40	46	4.9
Z101340	OKE-20-10	16.0	247	114	60	27	46	60	7.2
Z101341	OKE-22-10	20.0	275	120	64	31	60	70	11.3
Z101342	OKE-26-10	27.0	300	113	70	35	64	77	16

For larger sizes, see Classic Grade 8

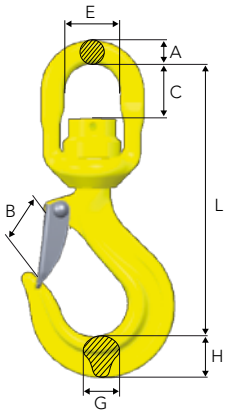
Swivel Latch Hook LKN



Art. no.	Code	WLL tonnes*	For chain dim. mm	L	B	C	E	A	G	H	Weight appr. kgs
Z101345	LKN-7/8-10	2.5	7, 8	155	28	28	38	12	18	24	0.8
Z101346	LKN-10-10	4.0	10	192	35	37	44	15	23	31	1.5
Z101347	LKN-13-10	6.7	13	238	40	47	48	19	28	38	3.1
Z101348	LKN-16-10	10.0	16	295	53	65	61	25	34	43	5.3

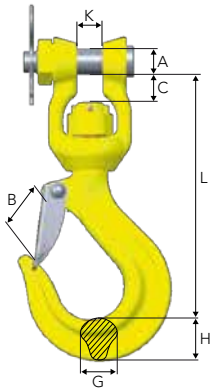
Swivel Latch Hook LKNK

with ball bearing



Art. no.	Code	WLL tonnes*	For chain dim.	L	B	C	E	A	G	H	Weight appr. kgs
Z101349	LKNK-7/8-10	2.5	7, 8	154	28	28	38	12	18	24	0.9
Z101350	LKNK-10-10	4.0	10	191	35	35	44	15	23	31	1.6
Z101351	LKNK-13-10	6.7	13	236	40	45	48	19	28	38	3.3
Z101352	LKNK-16-10	10.0	16	293	53	62	61	25	34	43	5.6
Z101354	LKNK-22-10	20.0	22	400	74	80	80	35	43	67	14.3

Clevis Swivel Hook LKNG



Art. no.	Code	WLL tonnes*	For chain dim.	L	B	C	A	G	H	K	Weight appr. kgs
Z101353	LKNG-16-10	10.0	16	258	53	30	28	34	43	27	5.7

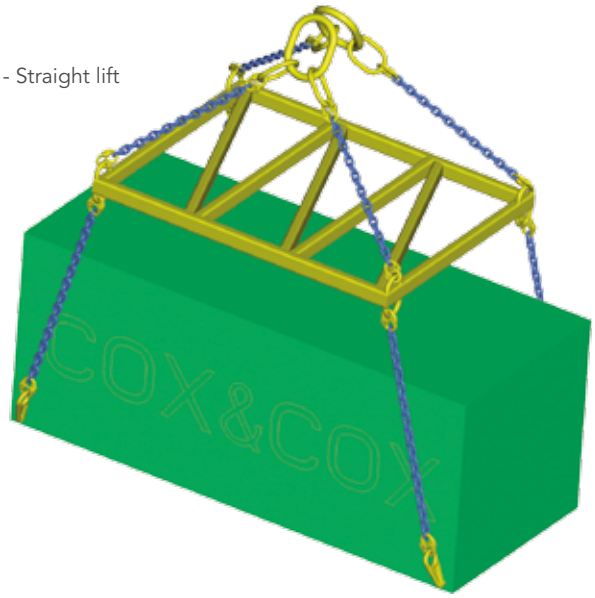
*Safety factor 4:1

All dimensions in mm

Container Hook CH

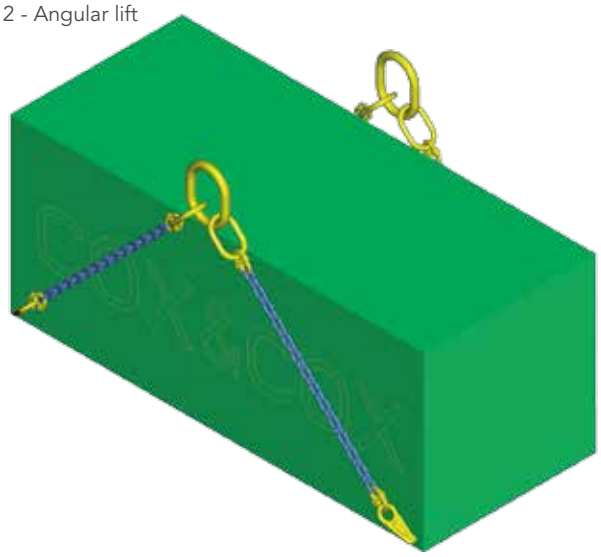
Made for lifting containers in their lower fittings

Alt. 1 - Straight lift



4 x CH straight

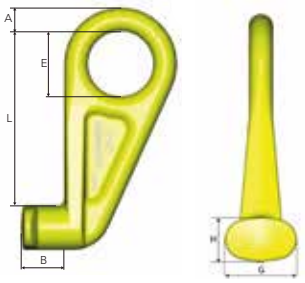
Alt. 2 - Angular lift



2 x CH turned 45° right

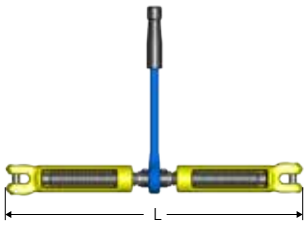
2 x CH turned 45° left

Art. no.	Code	WLL tonnes*	A	L	E	B	H	G	Weight kgs
Z101220	CH-3	12.5	25	187	70	46	47	75	3.8
Z101221	CH-3, 45° left	12.5	25	187	70	46	47	75	3.8
Z101219	CH-3, 45° right	12.5	25	187	70	46	47	75	3.8



Chain Tensioner GT - for lifting

Art. no	Model	WLL tonnes*	STF (daN)	L = Min. length (mm)	L = Max. length (mm)	Weight (kgs)
Z101367	GT-8-10	2.5	2800	400	600	3.3
Z101368	GT-10-10	4.0	2800	400	600	3.3



GT Chain Tensioner also available for lashing - see page 8:4.

*Safety factor 4:1

All dimensions in mm

Offshore Components

GUNNEBO
Industries

Arctic Offshore

Innovation and Quality With a Purpose

We have developed products to meet the stringent requirements of the offshore oil & gas industry for many years. The working conditions are tough and products have to be able to sustain extreme conditions. Our double latch hook, BKD, was developed with the aerospace industry as a role model; if one system fails another one is ready to save the situation. The extra latch on the BKD will retain the load in case an unintended opening of the first latch should occur.

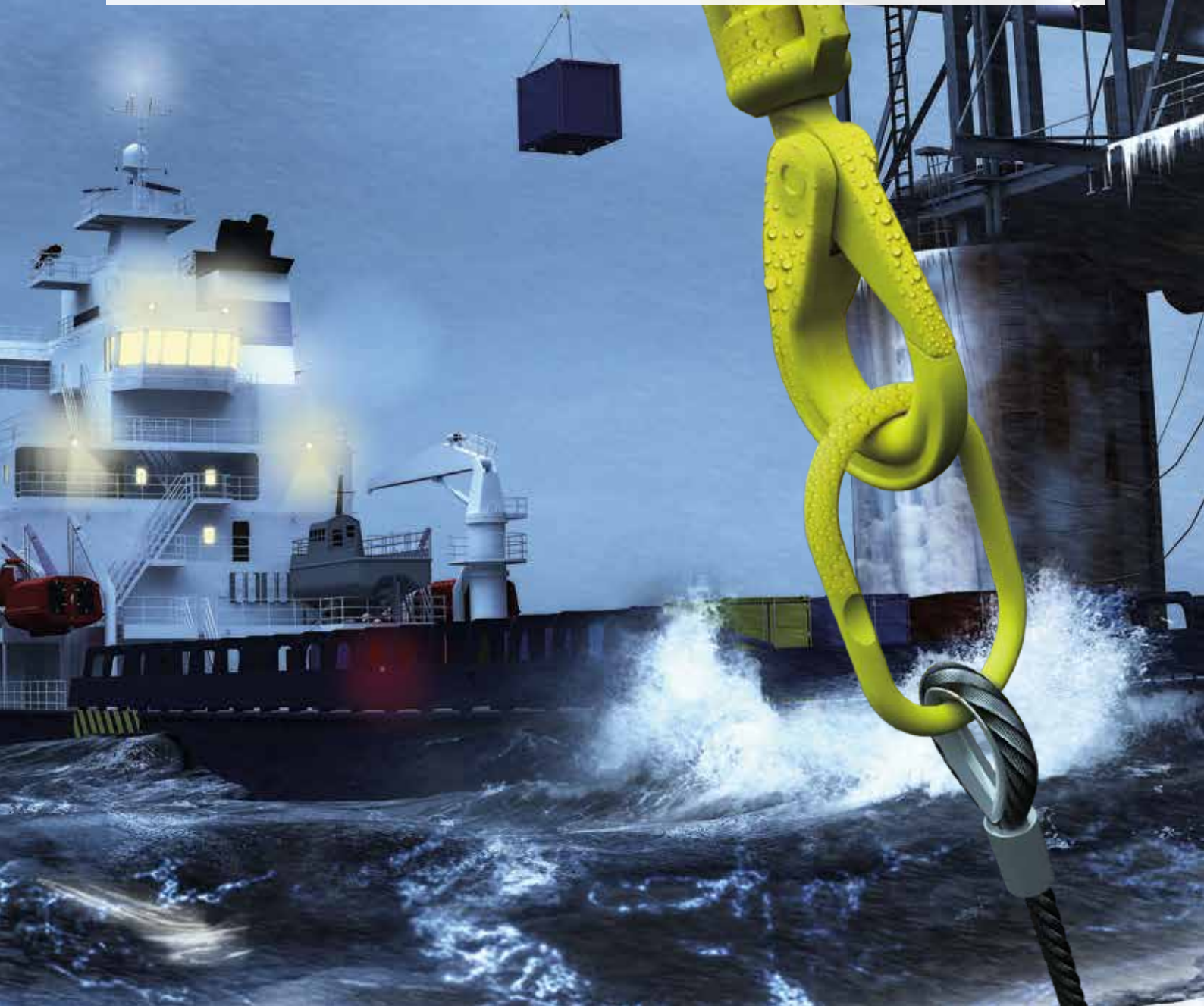
Our lifting systems have been valued for their long durability and quality. Regardless of the environmental conditions, our systems have provided lifting operations with high safety. Our quality systems give us the tools to work with continuous improvements and we will always put our great efforts into our mission to create the best available in the market. Our quality is there with a purpose.

DNV 2.7-1 certificate

We are type-approved by DNV to manufacture master links and shackles in accordance with DNV 2.7.1 specification. The approval verifies that Gunnebo Industries has a high consistent level of production stability in the entire process, from raw material to the finished product.

TYPE APPROVED PRODUCT
DNV·GL
DNVGL.COM/AF

DET NORSKE VERITAS
1864



Arctic Offshore Master Links

Type Approved to DNV 2.7-1

Adverse weather and rough sea conditions - sometimes in combination with extremely low temperatures - must be included in the design and safety factor of container lifting sets. The heat treatment of the components must ensure proper ductility and strength to sustain shock loads which may be imposed when the container is lifted from the deck of a vessel.

The lifting sets and its included components must be specially designed for the purpose to lift offshore containers. One of the main differences compared to the onshore standard or specification, is that it allows for the dynamic forces at sea by adding an extra enhancement factor to increase the level of safety. Another difference is that the requirements and testing of materials that will be used in cold environments, are more extensive.

Arctic Offshore Master Link MT

Arctic Offshore Master Link M

Engineered to Excellence

The Master Links have been engineered to be resistant towards environmental hydrogen embrittlement failures which are always a risk due to the corrosive environment present at sea. High quality steel that is homogenous with favourable microstructure, small grain size and low amount of impurities is being used in order to produce this high end component. In addition the hardness of the Master Links is below 38 on the Rockwell C scale giving high impact strength even at low operating temperatures (≥ 27J at -40 °C in the weld) and increased resistance towards hydrogen embrittlement failures in an offshore environment.

100% Proof Loading

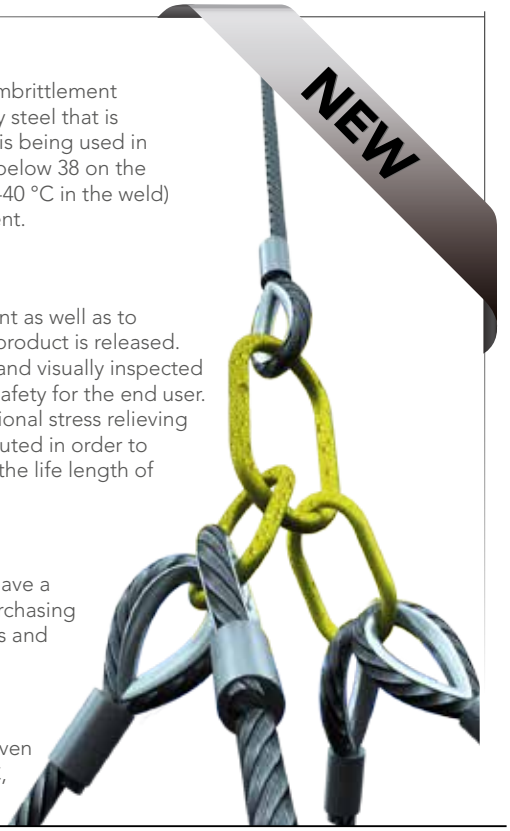
All lifts require reliable products with the highest safety to ensure a safe working environment as well as to protect the load. Gunnebo Industries perform rigorous testing in their factories before the product is released. 100 % of the components of all batches are proof loaded 2.5 times their working load limit and visually inspected by competent personnel. This is done without exception to guarantee highest quality and safety for the end user. To make the master links as suitable as possible for the harsh marine environment, an additional stress relieving heat treatment is performed before the master link is delivered to the end user. This is executed in order to remove any stress that might have formed during the proof loading, which might decrease the life length of the product.

Improved Working Load Limits

The Arctic Offshore Master Links comes in an optimized range where each master link will have a wider and higher working load limit span than the old range. This makes it easier from a purchasing point of view, as well as decreasing the risk of incorrect use. A table for the container ratings and recommended master links can be found on page 2:26.

Design Temperature -40 °C

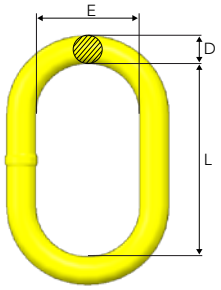
The Arctic Offshore Master Links are highly suitable to withstand shock loads and fatigue, even in extremely cold conditions. The new master link range has a design temperature of -40 °C, making it suitable for even the harshest weather conditions such as in the North Sea.



Arctic Offshore Master Link M

DNV 2.7-1 and DNV 2.7-3 Type Approved.

Art. no.	Code	Working Load Limits				L	E	D	Weight kgs
		DNV 2.7-1		EN1677-4	A-952/A952M ASME B30.26				
		tonnes	Max. Container rating* kgs	SF 5:1 tonnes	SF 5:1 tonnes				
Z101486	M-9T- OS	9.3	4 500	9.3	9.3	270	140	25	3.0
Z101487	M-12T- OS	12.5	7 500	12.5	12.5	270	140	28	3.8
Z101488	M-18T- OS	18.5	13 500	18.5	18.5	270	140	32	5.1
Z101489	M-24T- OS	24.0	21 000	24.0	24.0	270	140	36	6.5
Z101490	M-30T- OS	30.5	25 000	30.5	30.5	270	140	40	8.2
Z101491	M-40T- OS	40.0	N/A	40.0	40.0	300	180	45	11.9
Z101492	M-50T- OS	50.0	N/A	50.0	50.0	300	200	50	15.3
Z101493	M-65T- OS	65.0	N/A	65.0	65.0	350	200	55	20.7
Z101494	M-90T- OS	90.0	N/A	90.0	90.0	450	250	70	42.7
Z101495	M-125T- OS	125.0	N/A	125.0	125.0	450	260	80	57.5

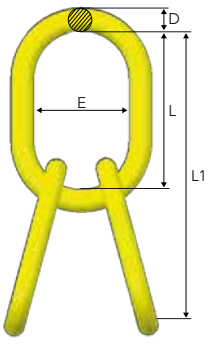


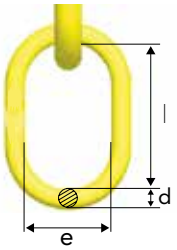
* For further information, see DNV 2.7-1

Arctic Offshore Master Link MT

DNV 2.7-1 and DNV 2.7-3 Type Approved.

Art. no.	Code	Working Load Limits				L1	L	E	D	l	e	d	Weight kgs
		DNV 2.7-1		EN 1677-4	A-952/A952M ASME B30.26								
		tonnes	Max. container rating* kgs	SF 5:1 tonnes	SF 5:1 tonnes								
Z101586	MT-9T- OS	9.3	4 500	9.3	9.3	430	270	140	25	160	95	22	6.0
Z101587	MT-12T- OS	12.5	7 500	12.5	12.5	430	270	140	28	160	95	25	7.8
Z101588	MT-18T- OS	18.5	13 500	18.5	18.5	460	270	140	32	190	110	28	10.8
Z101589	MT-24T- OS	24.0	21 000	24.0	24.0	540	270	140	36	270	140	32	16.7
Z101590	MT-30T- OS	30.5	25 000	30.5	30.5	540	270	140	40	270	140	36	21.2
Z101591	MT-40T- OS	40.0	N/A	40.0	40.0	570	300	180	45	270	140	40	28.3
Z101592	MT-50T- OS	50.0	N/A	50.0	50.0	600	300	200	50	300	180	45	39.1
Z101593	MT-65T- OS	65.0	N/A	65.0	65.0	650	350	200	55	300	200	50	51.2





* For further information, see DNV 2.7-1

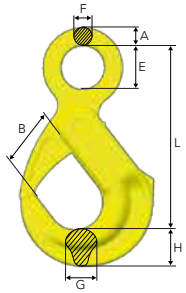
All sublinks have a WLL of min. 75% of the top link.

All dimensions in mm

Master Link Selection Chart

Reference: DNV 2.7-1, Table 8.1

Container rating (kgs)	Enhancement factor	Min. required WLL (t)	Recommended Master link M	Recommended Master link MT
500	-	7.00		
1000	-	7.00		
1500	-	7.00		
2000	3.500	7.00		
2500	2.880	7.20	M-9T OS	MT-9T OS
3000	2.600	7.80		
3500	2.403	8.41		
4000	2.207	8.83		
4500	2.067	9.30		
5000	1.960	9.80		
5500	1.873	10.30		
6000	1.766	10.60	M-12T OS	MT-12T OS
6500	1.733	11.26		
7000	1.700	11.90		
7500	1.666	12.50		
8000	1.633	13.07		
8500	1.600	13.60		
9000	1.567	14.10		
9500	1.534	14.57		
10000	1.501	15.01		
10500	1.479	15.53	M-18T OS	MT-18T OS
11000	1.457	16.02		
11500	1.435	16.50		
12000	1.413	16.95		
12500	1.391	17.38		
13000	1.368	17.79		
13500	1.346	18.18		
14000	1.324	18.54		
14500	1.302	18.88		
15000	1.280	19.20		
15500	1.267	19.64		
16000	1.254	20.06		
16500	1.240	20.47		
17000	1.227	20.86		
17500	1.214	21.24	M-24T OS	MT-24T-10 OS
18000	1.201	21.61		
18500	1.188	21.97		
19000	1.174	22.31		
19500	1.161	22.64		
20000	1.148	22.96		
20500	1.143	23.44		
21000	1.139	23.92		
21500	1.135	24.39		
22000	1.130	24.86		
22500	1.126	25.33		
23000	1.121	25.79	M-30T OS	MT-30T OS
23500	1.117	26.25		
24000	1.112	26.70		
24500	1.108	27.15		
25000	1.104	27.59		



Safety Hook BK Offshore

Requirements acc. to DNV 2.7-1

Art. no.	Code	WLL tonnes 4:1	WLL tonnes 5:1	L	B	E	F	G	H	Weight kgs
Z101355	BK-26-10 OS	27.0	21.2	342	100	80	25	54	68	16.5
Z101364	BK-32-8 OS	32.8	25.0	400	120	90	30	62	86	23.6

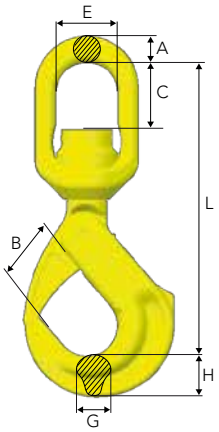
*Safety factor 4:1

All dimensions in mm

Swivel Safety Hook BKLK Offshore

Requirements acc. to DNV 2.7-1

Art. no.	Code	WLL tonnes 4:1	WLL tonnes 5:1	L	B	C	E	A	G	H	Weight kgs
Z101370	BKLK-13-10 W OS	6.7	5.4	307	55	72	61	25	30	40	4.9
Z101371	BKLK-16-10 W OS	10.0	8.0	367	62	88	82	26	37	50	8.4
Z101356	BKLK-18/20-10 OS	16.0	12.8	368	68	60	72	31	44	65	11.9
Z101294	BKLK-22-10 OS	20.0	16.0	436	79	80	80	35	50	62	16.8
Z101295	BKLK-26-10 OS	27.0	21.2	486	100	110	102	45	54	68	26.5
Z101344	BKLK-32-8 OS	32.8	25.0	533	120	110	102	45	62	86	32.3
	With double latch										
GS1167	BKLKD-13-10 W OS	6.7	5.4	307	44	72	61	25	30	40	5.0
GS1168	BKLKD-16-10 W OS	10.0	8.0	367	48	88	82	26	37	50	8.8
GS1169	BKLKD-18/20-10 OS	16.0	12.8	368	52	60	72	31	44	65	12.4
GS1170	BKLKD-26-10 OS	27.0	21.2	486	72	110	102	45	54	68	27.0

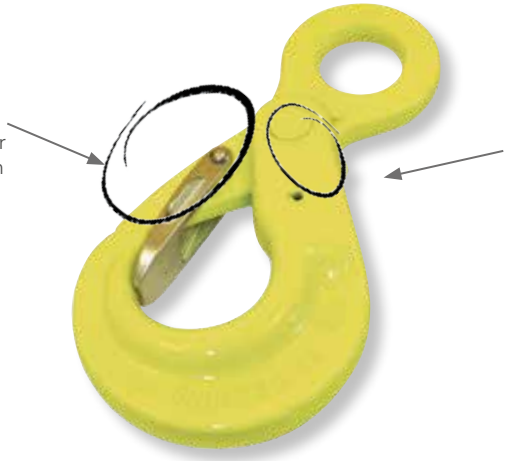


Safety Hook BK and BKLK with Double Latch

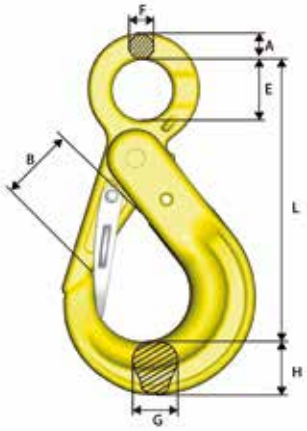
With recessed trigger

Due to the motion of the sea when loading and unloading offshore, direct impact on the hook could cause the latch to unintentionally open when not being under load, risking the load to unhitch. The double latch safety hook has an extra latch retaining the load in this case, keeping both load and personnel safe.

Double Latch
Should the hook latch accidentally open, either through direct impact or excessive wear on the trigger, the extra latch is there to retain the load safely. The latch does not cause inconvenience for the operator and may save their lives if something goes wrong.



Recessed Trigger
To avoid the trigger from being hit or damaged it has been recessed into the hook. This prevents the latch further from accidentally opening.



Art. no.	Code	WLL tonnes*	A	L	B	E	F	G	H	Weight kgs
Z101154	BKD-13-10	6.7	20	207	44	45	16	30	40	3.2
Z101155	BKD-16-10	10.0	26	254	48	56	20	37	50	5.8
Z101156	BKD-18/20-10	16.0	30	290	52	60	22	44	62	9.1
Z101373	BKD-26-10 OS	27.0	35	345	72	80	25	54	68	16.8

See our Offshore shackles in Chapter 4

*Safety factor 4:1

All dimensions in mm

Classic Components

GUNNEBO Industries

The SK-system - Endless Possibilities

A range of specialized components for safe and easy assembly to chain, steel wire rope, webbing and roundsling, designed to solve your below-the-hook problems.

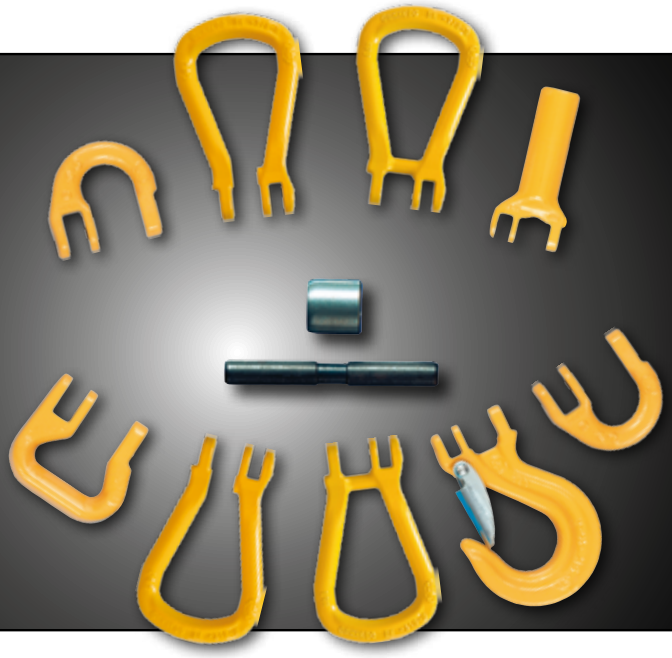
The Polyester Sling System provides:

- Universal coupling of components to chain, wire and synthetic slings.
- Quick and simple assembly - only a hammer needed.
- Easy assembly - standardized dimensions within each size range effectively eliminates the incorrect assembly of components with different safe working loads.
- Heavy hoisting with strong yet lightweight equipment, all components are manufactured from alloy steel for use with Grade 8 chain.

SKA - pin & collar

The SKA set, containing pin and collar, can be used to connect all products in the SK-range. This creates a multitude of available combinations, each adaptable to the unique lifting situation.

The SKA-set gives you flexibility - it can be disassembled and put in new combinations, to provide solutions for a versatile lifting environment.



SKLI/SKLU

Electrically insulated, lubricated, sealed roller bearing swivel. Fully rotational even at maximum load. Tested to resist 1.000 V. Suitable for protection of overhead cranes during welding operations on suspended loads.

By using the SKLI/SKLU with the SK-system you get a versitile solution that will fit almost any situation.

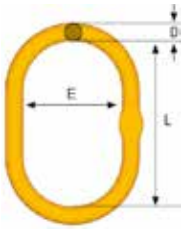
For technical specifications see page 2:42 - 2:43

*Safety factor 4:1

All dimensions in mm

Master Link MF

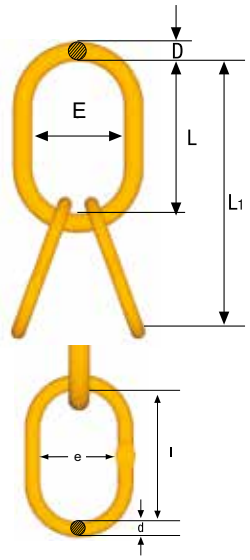
EN 1677–4



Art. no.	Code	WLL (SF 5:1) tonnes*		L	E	D	Weight kgs
		EN1677-4	A-952/A952M ASME B30.26				
Z100860	MF-86-10	2.5	3.2	125	70	14	0.4
Z100861	MF-108-10	4.0	5.2	140	80	17	0.8
Z100862	MF-1310-10	7.5	8.0	160	95	22	1.5
Z100863	MF-1613-10	10.0	13.6	190	110	28	2.5
Z100864	MF-2016-10	17.0	20.6	240	140	34	5.2
Z100865	MF-2220-10	25.0	30.9	250	150	40	7.3

Master Link with Sub Links MT

EN 1677–4

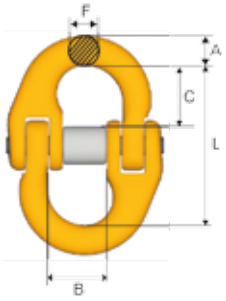


Art. no.	Code	WLL (SF 5:1) tonnes*		For chain 3-4-leg	L1	L	E	D	l	e	d	Weight kgs
		EN1677-4	A-952/A952M ASME B30.26									
Z100888	MT-6-10**	3.5	5.0	6	270	150	90	19	120	70	14	1.8
Z100889	MT-8-10**	5.2	8.0	7, 8	300	160	95	22	140	80	17	3
Z100890	MT-10-10**	11.5	16.0	10	360	200	120	30	160	95	22	6.4
Z100891	MT-13-10**	17.0	26.0	13	450	250	150	40	200	120	30	14.2
Z100892	MT-16-10**	28.0	35.0	16	500	300	200	50	200	120	32	23

** With flattened section for use with BL

Coupling Link G

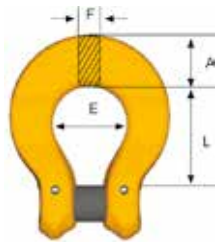
EN 1677-1



Art. no.	Code	WLL tonnes*	For chain dim.	L	B	F	A	C	Weight. kgs
Z622882	G-6-8	1.1	6	45	15	7	8	17	0.1
Z279333	G-7/8-8	2.0	7, 8	56	18	9	11	22	0.2
Z279430	G-10-8	3.2	10	68	25	11	13	26	0.3
Z279537	G-13-8	5.4	13	89	30	15	16	33	0.7
Z279634	G-16-8	8.2	16	105	36	19	20	40	1.2
Z279731	G-18/20-8	12.8	19	125	43	22	23	47	1.9
Z279838	G-22-8	15.5	22	152	50	24	26	59	3.0
Z349171	G-26-8	21.6	26	161	58	30	33	61	5.2
Z349189	G-32-8	32.8	32	200	70	38	40	77	9.5

Berglok Chain Coupler BL

EN 1677-1



Art. no.	Code	WLL tonnes*	For chain dim.	L	E	F	A	Weight kgs
Z622036	BL-6-8	1.1	6	27	20	9	14	0.1
Z195823	BL-7/8-8	2.0	7, 8	35	25	11	18	0.2
Z208022	BL-10-8	3.2	10	45	32	14	22	0.4
Z217820	BL-13-8	5.4	13	56	40	17	28	0.8
Z208226	BL-16-8	8.2	16	68	50	22	35	1.4

*Safety factor 4:1

All dimensions in mm

Chain Classic Grade 8 - Short link chain, KL

EN 818-2

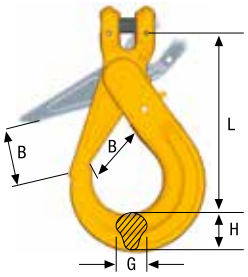
Heat treatment
Quenched and tempered.

Surface treatment
Painted black (KLB)
Painted yellow (KLU)

Art.no Box	Code	WLL tonnes*	D nom.	L	E	Weight kgs/m	Manufact. proof force kN	Breaking force kN
Z802174 - 1 x 200 m	KLB 6-8E	1.1	6	18	8.5	0.8	28.3	45.2
Z802175 - 1 x 200 m	KLB 7-8E	1.5	7	21	10	1.1	38.5	62
Z802176 - 1 x 200 m	KLB 8-8E	2.0	8	24	11	1.4	50.3	80.6
Z802156 - 1 x 100 m	KLB 10-8E	3.2	10	30	14	2.2	79	130
Z802157 - 1 x 100 m	KLB 13-8E	5.4	13	39	18	3.7	133	214
Z802177 - 1 x 100 m	KLB 16-8E	8.2	16	48	22	5.6	201	322
Z801203 - 1 x 100 m	KLB 19-8E	11.6	19	57	26	7.8	284	457
Z801228 - 1 x 50 m	KLB 22-8E	15.5	22	66	30	10.6	380	610
Z801231 - 1 x 50 m	KLB 26-8E	21.6	26	78	35	14.8	531	850
Z801232 - 1 x 25 m	KLB 32-8E	32.8	32	96	43	21.6	804	1300

Safety hook BKG

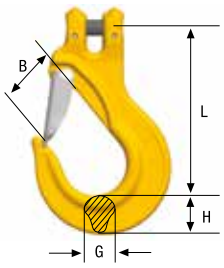
EN 1677-3



Art. no.	Code	WLL tonnes*	For chain dim.	L	B	G	H	Weight appr. kgs
Z297222	BKG-7/8-8	2.0	7, 8	120	37	17	26	0.9
Z295929	BKG-10-8	3.2	10	143	45	21	30	1.5
Z291527	BKG-13-8	5.4	13	179	55	30	39	2.8
Z291624	BKG-16-8	8.2	16	217	62	37	48	5.1

Sling hook EGKN with latch

EN 1677-2

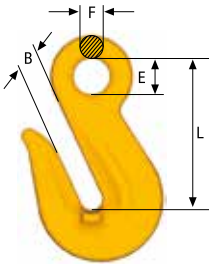


Art. no.	Code	WLL tonnes*	For chain dim.	L	B	G	H	Weight appr. kgs
Z100744	EGKN-7/8-8	2.0	7, 8	95	29	17	22	0.5
Z100772	EGKN-10-8	3.2	10	121	37	19	29	0.9
Z100773	EGKN-13-8	5.4	13	147	42	27	36	2.0
Z100774	EGKN-16-8	8.2	16	170	49	34	44	3.6

Grab hook OG

EN 1677-1

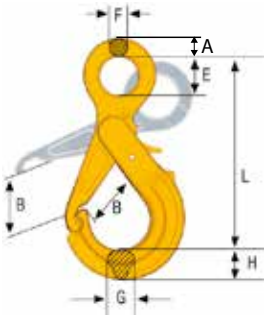
Not for use with Berglok. No reduction of working load limit, thanks to supporting lugs on either side of hook to prevent chain link deformation.



Art. no.	Code	WLL tonnes*	For chain dim.	L	B	E	F	Weight appr. kgs
Z100811	OG-7/8-8	2.0	7, 8	65	10	16	10	0.3
Z291022	OG-10-8	3.2	10	85	12	20	12	0.6
Z295220	OG-13-8	5.4	13	104	15	25	16	1.2
Z296221	OG-16-8	8.2	16	130	19	30	19	2.4

*Safety factor 4:1

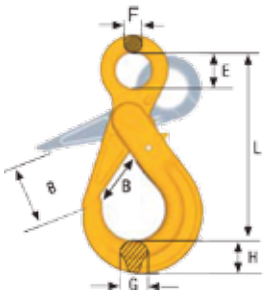
All dimensions in mm



Safety Hook OBK

with griplatch EN 1677-3

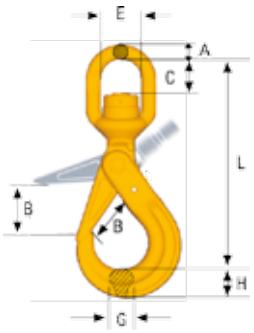
Art. no.	Code	WLL tonnes*	For chain dim.	A	L	B	E	F	G	H	Weight kgs
Z100218	OBK-22-8	15.5	22	30	335	87	70	24	40	57	10.2



Safety Hook BK

EN 1677-3

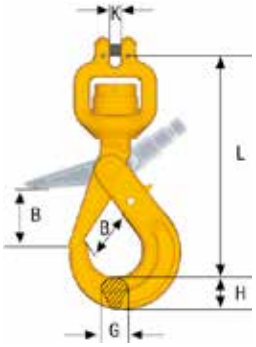
Art. no.	Code	WLL tonnes*	For chain dim.	L	B	E	F	G	H	Weight kgs
Z101357	BK-32-8	32.8	32	400	120	90	30	62	86	23.8



Safety Hook BKLK

EN 1677-3

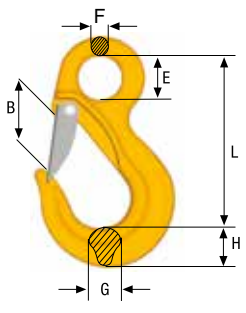
Art. no.	Code	WLL tonnes*	For chain dim.	L	B	C	E	A	G	H	Weight kgs
Z101344	BKLK-32-8 OS	32.8	32	533	120	110	102	45	62	86	32.3



Clevis Swivel Safety Hook BKH

with ball bearing EN 1677-3

Art. no.	Code	WLL tonnes*	For chain dim.	L	B	K	G	H	Weight kgs
Z336222	BKH-6-8	1.1	6	145	29	6.8	15	21	0.7
Z700809	BKH-7/8-8	2.0	7 - 8	181	37	8.8	17	26	1.2



Sling Hook EK (without latch) and EKN (with latch)

EN 1677-3

Art. no.	Code	WLL tonnes*	For chain dim.	L	B	E	F	G	H	Weight kgs
EN 1677-2										
Z100720	EK-32-8	32.8	32	333	105	76	38	61	80	17.7
Z100725	EKN- 32-8	32.8	32	333	93	76	38	61	80	17.9
DIN 7540 - Also available in ROV version on request										
Z101382	DK-50T-8	50.0		442	124	130	50.5	89	116	45.5
Z101361	DKN-50T-8	50.0		442	124	130	50.5	89	116	46.0
Z101384	DK-80T-8	80.0		610	155	102	63	110	145	79.5
Z101363	DKN-80T-8	80.0		610	155	102	63	110	145	80.0

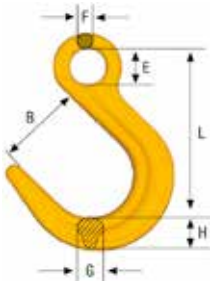
*Safety factor 4:1

All dimensions in mm

Foundry Hook OKE

EN 1677-1

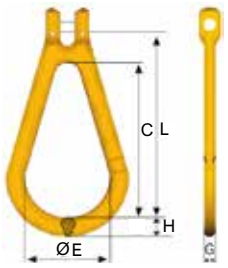
Art. no.	Code	WLL tonnes*	For chain dim.	L	B	E	F	G	H	Weight appr. kgs
Z645564	OKE-32-8	32.8	32	384	145	90	42	77	94	30



Clevis Egglink CEL

EN 1677-1

Art. no.	Code	WLL tonnes*	For chain dim.	C	E	G	H	L	Weight kgs
Z700968	CEL-7/8-8	2.0	7, 8	80	40	14	15	100	0.4
Z700969	CEL-10-8	3.2	10	100	50	18	19	126	0.7
Z700970	CEL-13-8	5.4	13	130	65	23	25	162	1.5

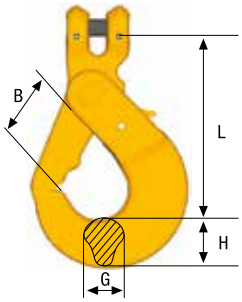


Container Hook BKGC

EN 1677-3

Art. no.	Code	WLL tonnes*	For chain dim.	L	B	G	H	Weight kgs
Z100240	BKGC-13-8	5.4	13	164	55	27	43	3.2
Z100242	BKGC-16-8	8.2	16	160	55	27	43	3.4

(Spare part: RDOBK-16 to both sizes)



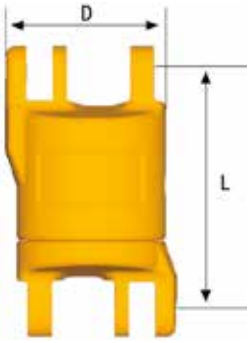
*Safety factor 4:1

All dimensions in mm

Roller-Bearing Swivel, SKLI/SKLU EN 1677-1

Electrically insulated, lubricated, sealed roller bearing swivel. Fully rotational even at maximum load. Tested to resist 1.000 V. Suitable for protection of overhead cranes during welding operations on suspended loads.

The Gunnebo Industries SKLI is equipped with a heavy duty roller bearing, enabling high durability and safe use also under severe load. It also has heavy duty nylon insulation inside to decrease friction when in use. The SKLI is compatible with the entire Gunnebo Industries SK-range for versatile use.



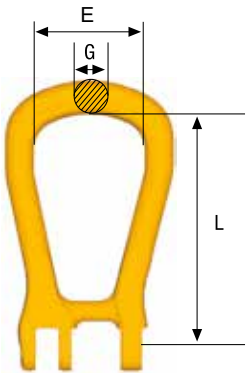
Roller-bearing Swivel SKLI/SKLU

Art. no.	Code	WLL tonnes*	For chain dim.	L	D	Weight kgs
Z100316	SKLI-7/8-8	2.0	7, 8	75	48	0.7
Z100414	SKLI-10-8	3.2	10	97	59	1.3
Z100415	SKLI-13-8	5.4	13	120	75	2.8
Z100416	SKLI-16-8	8.2	16	137	90	4.6
Z100417	SKLI-18/20-8	12.8	19	159	104	7.3
RS16520	SKLU-22-8*	15.5	22	160	109	9.2
RS16530	SKLU-26-8*	21.6	26	207	135	18.3

* Uninsulated

Load Pin and Locking Collar - SKA

Art. no.	Code	Weight kgs
Z700674	SKA-6-8	0.01
Z323624	SKA-7/8-8	0.02
Z318024	SKA-10-8	0.04
Z303822	SKA-13-8	0.08
Z303725	SKA-16-8	0.14
Z145048	SKA-18/20-8	0.26
Z133530	SKA-22-8	0.35
Z605407	SKA-26-8	0.63
Z650554	SKA-32-8	1.05



Master Link SKG (closed) EN 1677-1

Art. no.	Code	WLL tonnes*	For chain dim.	L	E	G	Weight kgs
Z419684	SKG-7/8-8	2.0	7, 8	99	50	14	0.3
Z419781	SKG-10-8	3.2	10	127	66	18	0.6
Z419888	SKG-13-8	5.4	13	145	72	22	1.1
Z419985	SKG-16-8	8.2	16	175	82	25	1.5
Z420086	SKG-18/20-8	12.8	19	204	105	30	3.0

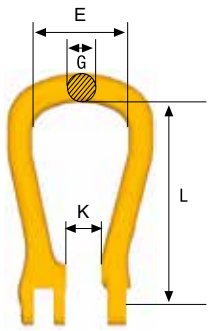
*Safety factor 4:1

All dimensions in mm

Master Link SKO (open)

EN 1677-1

Art. no.	Code	WLL tonnes*	For chain dim.	L	E	G	K	Weight kgs
Z418683	SKO-7/8-8	2.0	7, 8	99	50	14	15	0.3
Z418780	SKO-10-8	3.2	10	127	66	18	20	0.6
Z419383	SKO-13-8	5.4	13	145	72	22	25	1
Z419480	SKO-16-8	8.2	16	175	82	25	30	1.5
Z419587	SKO-18/20-8	12.8	19	204	105	30	36	2.9

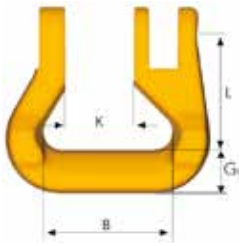


Roundsling Coupling SKR

EN 1677-1

Special shape for full WLL of the roundsling

Art. no.	Code	WLL tonnes*	L	B	G	K	Weight kgs
Z127840	SKR-7/8-8	2.0	35	40	13	18	0.2
Z143143	SKR-10-8	3.2	42	47	16	24	0.4
Z302538	SKR-13-8	5.4	50	53	19	29	0.7
Z143240	SKR-16-8	8.2	62	67	23	35	1.3
Z143347	SKR-18/20-8	12.8	71	80	28	43	1.9
Z100057	SKR-22-8	15.5	111	125	40	50	5.3
Z100055	SKR-26-8	21.6	129	150	48	58	8.9

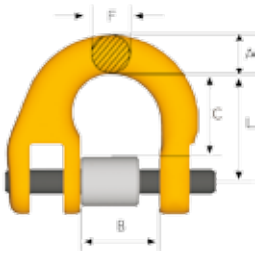


Half-link SKT

(incl. locking set)

EN 1677-1

Art. no.	Code	WLL tonnes*	For chain dim.	L	B	F	A	C	Weight kgs
Z426286	SKT-7/8-8	2.0	7, 8	28	18	9	11	22	0.1
Z426383	SKT-10-8	3.2	10	34	25	11	13	26	0.2
Z426480	SKT-13-8	5.4	13	44	30	15	16	33	0.4
Z426587	SKT-16-8	8.2	16	52	36	19	20	40	0.6
Z426684	SKT-18/20-8	12.8	19	63	43	22	23	47	1.1
Z100225	SKT-22-8	15.5	22	76	50	24	26	59	1.7
Z100226	SKT-26-8	21.6	26	80	58	30	33	61	2.6
Z100227	SKT-32-8	32.8	32	100	70	38	40	78	4.9

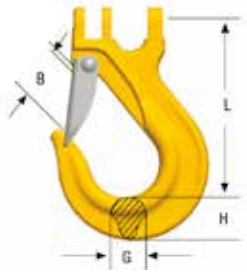


Sling Hook ESKN/SKN

with latch

EN 1677-2

Art. no.	Code	WLL tonnes*	For chain dim.	L	B	G	H	Weight kgs
Z424682	SKN-7/8-8	2.0	7, 8	90	27	18	21	0.4
Z424789	SKN-10-8	3.2	10	115	34	23	29	0.8
Z101214	ESKN-13-8	5.4	13	145	42	28	36	1.8
Z100786	ESKN-16-8	8.2	16	178	54	38	43	3.4
Z100781	ESKN-18/20-8	12.8	19	197	59	49	51	5.1



*Safety factor 4:1

All dimensions in mm

How do you transform your excavator into a crane?

Universal Weld-On Hook, UKN

EN 474-1

For excavators, construction machinery, lifting beams etc. Specified by leading excavator manufacturers.

Welding Instructions for UKN

WARNING! WELDING OPERATION SHOULD BE CARRIED OUT BY A TRAINED WELDER.

ELECTRODES
Electrodes or wire must be for use with non-alloy or low-alloy steel. Electrodes must not be wet. Do not use rusty welding wire.
Following types are recommended:
ISO 2560, AWS A 5.1 E 7018 or equal.

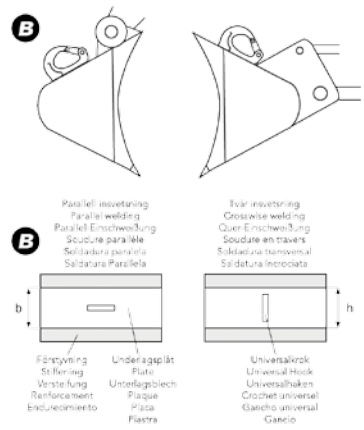
B. POSITIONING

These are universal hooks and can be welded on to different supporting materials (e.g. girder). If the hook is welded on to a bucket it should be placed so that:

1. it will withstand all strains caused by different positions of the bucket.
2. any damage to the coupling element which might be caused by the other parts of the excavator is avoided.
3. the user will not be injured (pinched or cut).
4. any unintentional unhooking of the coupling element will be made impossible.
5. the coupling element can be easily hooked and unhooked.
6. it doesn´t hamper excavation and lifting.

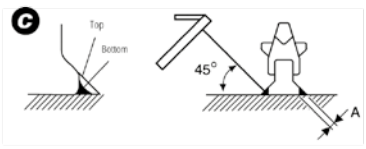
The hook should be placed in the middle at the upper part of the bucket. The position should be protected, but also easy to reach. Figure shows two different positions.

Before use a competent person shall certify that the hook may be taken into use. Always take into consideration the tensile strength and thickness of the supporting material. Proof load testing may be required



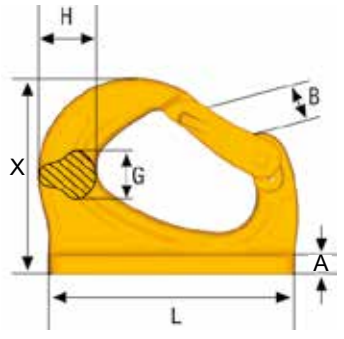
C. WELDING

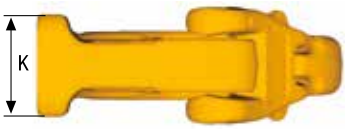
Before welding, the surfaces must be cleaned thoroughly from rust, paint or similar.
NOTE! At temperatures below 0°C the welding surfaces should be preheated.
Positioning of the hook should be done by spot welding in each corner. . Next, the bottom joint is to be welded and must be carried out continuously (well filled all around). Welding torch or electrode should be held at 45° (see figure), to obtain required penetration. When the top joint is to be welded, a larger electrode maybe chosen. Minimum value of throat thickness, A, (see table) must be achieved. Cracks or pores are not permitted.
NOTE! The welded joint must NOT be cooled by water. Only non-forced air cooling, is allowed.
The pin (axle) should be lubricated until the hook has reached ambient temperature
In service temperature: -40 **°C to +200 °C without reduction of the WLL.**
Each UKN hook is proof loaded 3 x WLL and inspected prior delivery.



Can also be provided unpainted

Art. no.	Code	WLL tonnes**	B	G	H	K	L	A	X	Weight kgs
Z1002560	UKN-0,75*	0.75	20	13	20	19	81.5	5	56	0.2
Z6511810	UKN-1*	1.0	27	17	25	25	95	6	72	0.6
Z7009060	UKN-2*	2.0	33	20	30	30	114	8	86	0.9
Z6455730	UKN-3	3.0	30	23	32	35	132	10	105	1.3
Z6521160	UKN-4	4.0	30	29	38	42	140	11	114	2.0
Z6455800	UKN-5	5.0	34	30	47	45	165	12	131	3.2
Z6515390	UKN-8	8.0	34	40	51	50	172	13	133	3.6
Z6456030	UKN-10	10.0	47	43	58	55	220	14	170	8.2
Z1007850	UKN-15	15.0	55	50	67	60	240	15	188	9.8





* Welding plate slightly curved
** Safety factor 5:1

All dimensions in mm

Spare Part RD BK

(with assembly kit)

Set for BK/BKG Safety hooks consists of trigger, stainless steel spring, retaining pin and assembly kit

Recessed trigger

Art. no.	Code	Weight kgs
Z100282	RDBK-6	0.02
Z100283	RDBK-8	0.03
Z100284	RDBK-10	0.03
Z100285	RDBK-13	0.05
Z100286	RDBK-16	0.10
Z100297	RDBK-18/20	0.21
Z100287	RDBK-22	0.20
Z100280	RDBK-26	0.50
Z100294	RDBK-32	0.40
Z1002970	RDBK 18/20 OS	0.21
Z1002870	RDBK-22 OS	0.20
Z1002950	RDBK-26OS	0.50
Z1002940	RDBK-32OS	0.70

Standard trigger (long trigger)

Art. no.	Code	Weight kgs
Z1002820	RDBK-6	0.01
Z1002830	RDBK-8	0.03
Z1002840	RDBK-10	0.03
Z1002850	RDBK-13	0.05
Z1002860	RDBK-16	0.12

Spare Part RD OBK / GBK

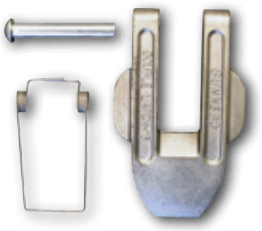
(with assembly kit)

Set for OBK/GBK Safety hooks consists of trigger, stainless steel spring, retaining pin and assembly kit

Art. no.	Code	Weight kgs
Z100281	RDOBK-6	0.01
Z100288	RDOBK-7/8	0.02
Z100289	RDOBK-10	0.03
Z100290	RDOBK-13	0.05
Z100291	RDOBK-16	0.08
Z100297	RDOBK-18/20	0.21
Z100323	RDOBK-22-8	0.35

Spare Part RD BKD / BKLKD

(with assembly kit)



Art. no.	Code	Weight kgs
Z101157	RDBKD-13 double latch	0.22
Z101158	RDBKD-16 double latch	0.42
Z101159	RDBKD-18/20 double latch	0.47

Spare Part RD GKN / OKN

Art. no.	Code	Weight kgs
Z622175	RDGKN/OKN-7/8-8	0.05
Z622183	RDGKN/OKN-10-8	0.09
Z622206	RDGKN/OKN-13-8	0.13
Z622214	RDGKN-16-8	0.22

Spare Part RD LKNG

Art. no.	Code		Weight kgs
Z700495	RDLKNG-16	Boolt and Nut	0.7
B60122	RDLKNG-16	Bronze Washer and Retaining pin	0.03

Spare Part LKN / LKNK / EKN / OKN / EGKN / RH / ESKN

Set consists of latch, stainless steel spring and rivet

Art.no.	Code	Weight kgs
Z100445	RDEKN- 6 / OKN / RH 1	0.03
Z100447	RDEKN- 7/8 /LKN / RH 2	0.05
Z100450	RDEKN-10 / LKN / RH 3	0.06
Z100449	RDEKN-13 / LKN / RH 5	0.13
Z100217	RDEKN-16 / LKN	0.20
Z100453	RDEKN-18/20	0.26
Z100452	RDEKN-22	0.42
Z100742	RDEKN-26	0.53
Z100743	RDEKN-32	0.60

Spare Part Set SKN, OKN and LKN (old version)

Set consists of latch, stainless steel spring and rivet

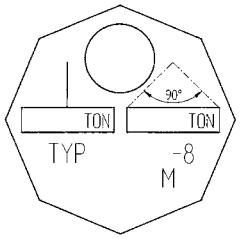
Art. no.	Code	Weight kgs
Z420581	RDSKN/LKN-7/8-8	0.05
Z420688	RDSKN/LKN-10-8	0.10
Z420785	RDSKN/LKN-13-8	0.14
Z420989	RDSKN/OKN-16-8	0.22
Z421087	RDSKN/OKN-18/20-8	0.27
Z700698	RDOKN-22-8	0.48

Spare Part UKN

Spare part set RDUKN (msp) consists of forged latch, pin, stainless steel spring and retaining pin

Art. no.	Code	Weight kgs
Z100258	RDUKN-0.75	0.06
Z700264	RDUKN-1	0.12
Z700958	RDUKN-2	0.20
Z700266	RDUKN-3/4	0.20
Z700268	RDUKN-5/8	0.36
Z700269	RDUKN-10	0.88
Z700984	RDUKN-15	1.20

Id-tag grade 8



Stainless

Art.no.	Code
Z100004	Id-tag

Sling Id-tag Grade 10

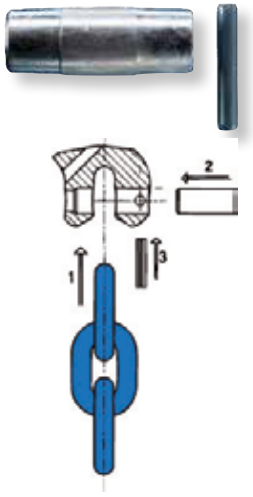
Stainless steel

Art. no.	Code
B14841	Flexitag 6 mm with ferrule and wire
B14842	Flexitag 8 mm with ferrule and wire
B14843	Flexitag 10 mm with ferrule and wire
B14844	Flexitag 13 mm with ferrule and wire
B14845	Flexitag 16 mm with ferrule and wire
Z100971	Flexitag 6 mm
Z100972	Flexitag 8 mm
Z100973	Flexitag 10 mm
Z100974	Flexitag 13 mm
Z100975	Flexitag 16 mm
Z101077	Flexitag 20 mm
Z100899	Flexitag Neutral

Load Pin Set CLS

Clevis connection set (CLS) consists of one load pin and one spring retaining pin.

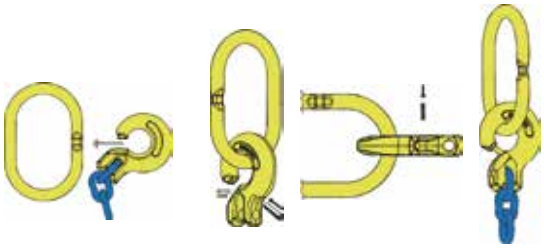
Art. no.	Code	Weight kgs/ea
B14930	CLS- 6	0.01
B14931	CLS- 8	0.02
B14932	CLS-10	0.04
B14933	CLS-13	0.09
B14934	CLS-16	0.16
B14935	CLS-20	0.26



Spare Part CS

The C-connection set CS, for CG, CGD, CL, CLD and RH hook, consists of one blocking pin and one spring retaining pin, for locking

Art. no.	Code	Weight kgs/ea
B14920	CS- 6-10	0.01
B14921	CS- 8-10 / RH-1& -2	0.01
B14922	CS-10-10 / RH-3	0.01
B14923	CS-13-10	0.03
B14924	CS-16-10 / RH-5	0.05



Assembly: C-coupling - C-grab/C-lok with MF

Close/Open Locking Set FlexiLeg Quick Pin

Art. no.	Code	Weight kgs
Z101010	QP-6-10	0.01
Z101011	QP-8-10	0.01
Z101012	QP-10-10	0.01
Z101013	QP-13-10	0.03
Z101014	QP-16-10	0.06

Locking Set SKA

SKA locking set for G-link, consists of a load pin and locking collar.

Art. no.	Code	Weight kgs
Z100989	SKA- 6-10	0.01
Z100933	SKA- 7/8-10	0.02
Z100934	SKA-10-10	0.04
Z100990	SKA-13-10	0.08
Z100991	SKA-16-10	0.14
Z101176	SKA-20-10	0.26
Z650555	SKA-22-10	0.35
Z650556	SKA-26-10	0.63
Z650557	SKA-32-10	1.09

Art. no.	Code	Weight kgs
Z700674	SKA-6-8	0.01
Z323624	SKA-7/8-8	0.02
Z318024	SKA-10-8	0.04
Z303822	SKA-13-8	0.08
Z303725	SKA-16-8	0.14
Z145048	SKA-18/20-8	0.26
Z133530	SKA-22-8	0.35
Z605407	SKA-26-8	0.63
Z650554	SKA-32-8	1.05

Load Pin Set Berglok BLA

Set for Berglok and Clevis type connections. Consists of one load pin and two retaining pins.

Art. no.	Code	Weight kgs
Z275649	BLA-6-8*	0.01
Z275347	BLA-7/8-8*	0.02
Z275444	BLA-10-8	0.04
Z275648	BLA-13-8	0.08
Z276047	BLA-16-8	0.15
Z276241	BLA-19-8	0.26

* Also for Safety hook BKH

C - Close/open function

L - Permanent locking function

Locking Set Midgrab MIG

Art. no.	Code	Weight kgs
B14904	C-8	0.02
B14905	L-8	0.02
B14914	C-10	0.02
B14915	L-10	0.02
B14916	C-13	0.08
B14917	L-13	0.05

Information For Safe Use and Maintenance

The following information aims to give advice and explain the most common questions in order to ensure safe and proper use of lifting equipment.

It is of the utmost importance that this information is known to the user, and in accordance with the Machinery Directive 2006/42/EC this information must be delivered to the customer.

Extreme Environments

The in-service temperature effects the WLL as follows:

Temperature (°C)	Reduction of WLL			
	Grade 10 chain (400)	Grade 10 chain (200)	Grade 10 components	Grade 8 chain & components
-40 to +200 °C	0 %	0 %	0 %	0 %
+200 to +300 °C	10 %	Not allowed	10 %	10 %
+300 to +400 °C	25 %	Not allowed	25 %	25 %

Upon return to normal temperature, the sling reverts to its full capacity within the above temperature range. Chain slings should not be used above or below these temperatures. **Note! A chain sling with Grade 10 (200) chain must not be used in temperatures above 200 °C.**

- Chain and components must not be used in alkaline (>pH10) or acidic conditions (<pH6).
- Comprehensive and regular examination must be carried out when used in severe or corrosive inducing environments.
- In uncertain situations consult your Gunnebo Industries dealer.

Surface Treatment

Note! Hot-dip galvanizing or plating is not allowed outside the control of the manufacturer.

Protect Yourself and Others

- Before each use the chain sling should be checked for obvious damage or deterioration.
- Know the weight of the load, the centre of gravity and ensure it is ready to move and no obstacles will obstruct the lift.
- Check the conformity of the load with the WLL of the ID tag for the specific working configuration. *Never use a sling without a legible valid ID tag!*
- Prepare the landing site.
- Never overload a sling and avoid shock loading.
- Never use an improper sling configuration.
- Never use a worn out or damaged sling.
- Never ride on the load.
- Never walk or stand under a suspended load.
- Take into consideration that the load may swing or rotate.
- Watch your feet and fingers while loading/unloading.
- Always ensure that your back is clear.

General Advice

- Ensure that the sling is precisely as ordered.
- Ensure that the manufacturers certificate is in order.
- Ensure that the ID-tag corresponds to the information on the certificate (the following ID tag information is compulsory: WLL, number of chain legs, nominal size (mm) individual ID-mark, manufacturer, CE-marking and year of manufacturing).
- Ensure that all details of the chain sling are recorded.
- Ensure that the staff using the chain sling has received the appropriate information and training.

Asymmetrical Loading Conditions

For unequally loaded chain legs we recommend that the WLL are determined as follows:

- 2-leg slings calculated as the corresponding 1-leg sling
- 3 and 4-leg slings calculated as the corresponding 1-leg sling. (If it is certain that 2-legs are equally carrying the major part of the load, it can be calculated as the corresponding 2-leg sling.

Safe Use

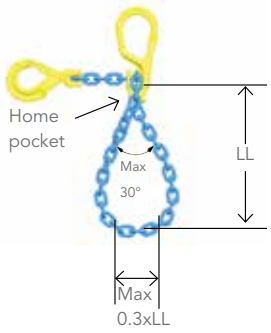
A chain sling is usually attached to the load and the crane by means of terminal fittings such as hooks, links etc.

When frequently using a sling to it's maximum load, we recommend increasing the sling size by one dimension.

Chain should be without twists or knots, if the chain leg needs length adjustment use a shortening device. The lifting point should be seated well down in the terminal fitting, never on the point or wedged in the opening. The terminal fitting should be free to incline in any direction.

The chain may be passed under or through the load to form a choke hitch or basket hitch. The chain should be allowed to assume it's natural angle and should not be hammered down.

Where choke hitch is employed the WLL of the chain sling should be reduced by 20% (unless the LK choker hook is used)



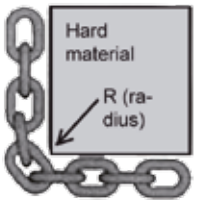
Endless chain slings shall be rated in the same way as a 2-legged sling.

Home pocket loop shall have an internal loop top angle of max. 30°. Rule of thumb: Cross dimension of the load shall be max. 0.3 times the loop length (LL)

Definition: The home pocket is the shortening pocket of the top component directly above the clevis to which the chain is connected.

Sharp edges

Use edge protectors to prevent sharp edges from damaging the chain. If lifting over sharp edges reduce the working load with the following reduction tor.



Edge load	*R >2 x chain Ø*	*R > chain Ø*	*R < chain Ø*
Reduction factor	*1.0*	*0.7*	*0.5*

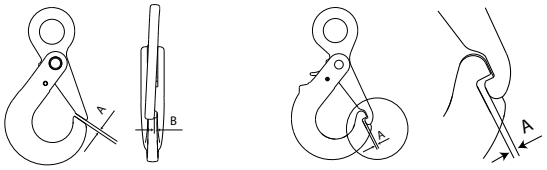
- The angle of the edge must not be below 90°.
- Chain links shall be protected from being bent or deformed and from receiving cuts or gouges.
- Chain sling WLL is to be reduced when chain is rigged over an edge radius R less than two (2) x chain diameter (d).
- Reduced WLL equals chain sling WLL from identification tag x reduction factor.
- Slings shall be padded or protected from the edges of their loads when the edge radius is less than 0.5 of the chain diameter(d).
- Slings shall be rigged to prevent chain from sliding over a load edge radius while lifting.
- Slings used in basket hitch shall have the loads balanced to prevent slipping.

When lifting with chain directly on lugs the lug diameter > 3x the pitch of the chain, otherwise the WLL must be reduced by 50%.

Maintenance

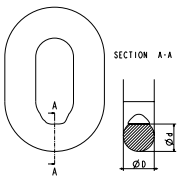
Periodic thorough examination must be carried out at least every 12 months or more frequently according to local statutory regulations, type of use and past experience.

1. Overloaded chain slings must be taken out of service.
2. If the lifting equipment is more than 25 years old, it must be recorded in the inspection register. An investigation into both its previous operating history and its current use should be made, as there is a potentially significant risk of fatigue, environmental impact etc.
3. Chain and components including load pins which have been damaged, deformed, elongated, bent or showing signs of cracks or gouges shall be replaced. Carefully grind away small sharp cuts and burrs. Additional testing by magnetic particle inspection and/or proof loading at max. 2 x WLL may be carried out.
4. Check the function of latches, triggers and retaining pins / bushes, replace when necessary. Always use Gunnebo Lifting original spare parts.
5. Max. clearance between hook and latch. Note: For a Griplatch hook measure the difference between dimension A with unloaded spring and dimension A when the latch is pressed against the hook. Clearance B not applicable.



Size	Max. A (mm).	Max. B (mm).
6	2,2	3,5
7/8	2,7	4,5
10	3	6
13	3,3	7
16	4	9
18/20	5,5	10
22	6	11
26	6,5	12
32	7	13

6. The wear of the chain and component shall in no place exceed 10% of the original dimensions. The chain link wear - max. 10% - is defined as the reduction of the mean diameter measured in two directions.



$$\frac{d_1 + d_2}{2} > 0{,}9d_{nn}$$

d_n = nominal diameter

Quality Assurance

Type Testing

In order to prove the design, material, heat treatment and method of manufacture, each size of component and chain has been type tested in the finished condition in order to demonstrate that the component and chain possesses the required mechanical properties. The following testing procedures are particularly relevant:

Test for Deformation

The Manufacturing Proof Force (MPF) for the relevant size of the component is applied and removed. The dimensions after proof loading shall not alter from the original dimensions within the tolerances prescribed in our specifications and in the international standards.

Static Tensile Test

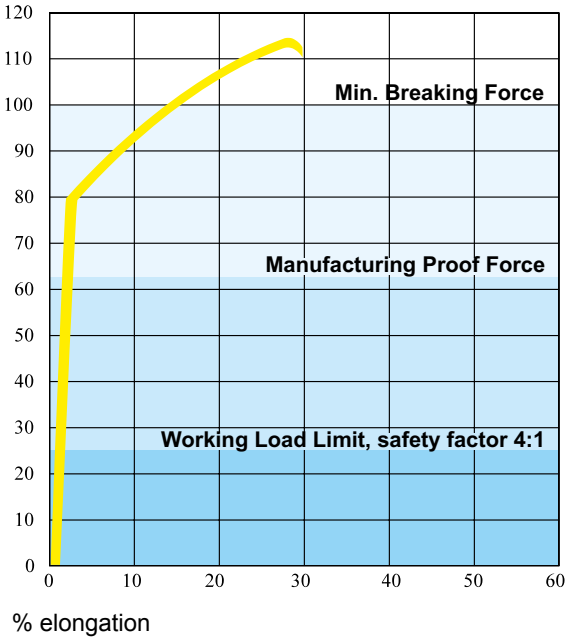
The Breaking Force (BF) for each component and size is verified. The verified value shall be at least equal to the Minimum Breaking Force (MBF) value. The MBF value is equal to the Working Load Limit (WLL) multiplied by the safety factor.

Fatigue Test

By fatigue testing in pulsator testing machines the toughest conditions of service are simulated.

Stress / Elongation Diagram

Chain grade 10, type KL
% of min. Breaking Force



Manufacturing Testing

During manufacture continuous process tests are carried out according to the requirements in our specifications and in the latest international standards. The following testing procedures are particularly relevant:

Proof Force

Each individual component and chain link is tested to the Manufacturing Proof Force (MPF) level before delivery. The MPF level is 2.5 times the WLL, equal to 62,5% of the Minimum Breaking Force.

Non Destructive Test / Visual Inspection

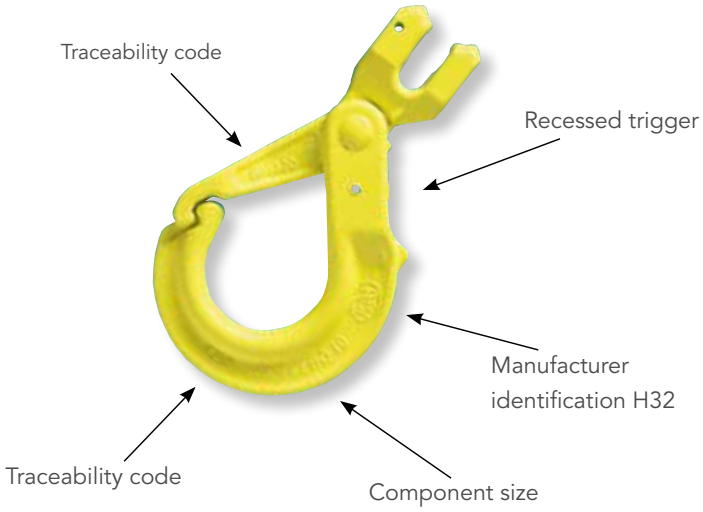
3% of every production batch of forged components are subject to magnetic particle or dye penetrating examination. Visual inspection is carried out on each chain link and each forged component to detect defects.

Static Tensile and Ultimate Elongation test

During manufacture, samples are tested and the Minimum Breaking Force (MBF) value and the total ultimate elongation are verified.

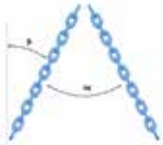
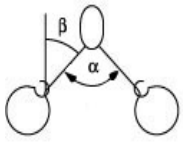
Bending Deflection

During manufacturing, of chain and master links, samples are taken and the minimum bend deflection is verified.



Working Load Limits

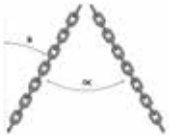
Grade 10 GrabiQ (tonnes)

	1-leg	2-leg		3- & 4-leg		Choke hitch	
							
Chain dim.		β 0-45° α 0-90°	β 45-60° α 90-120°	β 0-45° α 0-90°	β 45-60° α 90-120°	β 0-45° α 0-90°	β 45-60° α 90-120°
6	1.5	2.1	1.5	3.15	2.2	1.6	1.2
7	2.0	2.8	2.0	4.2	3.0	2.2	1.6
8	2.5	3.5	2.5	5.2	3.7	2.7	2.0
10	4.0	5.6	4.0	8.4	6.0	4.4	3.2
13	6.7	9.5	6.7	14.0	10.0	7.4	5.3
16	10.0	14.0	10.0	21.0	15.0	11.0	8.0
20	16.0	22.4	16.0	33.6	24.0	17.6	12.8
22	20.0	28.0	20.0	42.0	30.0	22.0	16.0
26	27.0	38.2	27.0	57.3	40.5	29.7	21.6
32	40.0	56.0	40.0	84.0	60.0	44.0	32.0

Safety factor 4:1. Working load limits are based upon equally loaded and disposed sling legs.

Grade 8 Classic (tonnes)

EN 818-4:1996

	1-leg	2-leg		3-leg & 4-leg		Choked endless sling
						
Chain dim. mm		β 0-45° α 0-90°	β 45-60° α 90-120°	β 0-45° α 0-90°	β 45-60° α 90-120°	
6	1.1	1.6	1.1	2.36	1.7	1.8
7	1.5	2.12	1.5	3.15	2.24	2.5
8	2.0	2.8	2.0	4.25	3.0	3.15
10	3.15	4.25	3.15	6.7	4.75	5.0
13	5.3	7.5	5.3	11.2	8.0	8.5
16	8.0	11.2	8.0	17.0	11.8	12.5
19	11.2	16.0	11.2	23.6	17.0	18.0
22	15.0	21.2	15.0	31.5	22.4	23.6
26	21.2	30.0	21.2	45.0	31.5	33.5
32	31.5	45.0	31.5	67.0	47.5	50.0

Safety factor 4:1. Working load limits are based upon equally loaded and disposed sling legs.

Rules for Correct WLL

Where choke hitch is employed, the WLL of the chain sling should be reduced by 20 % (unless the LK choker hook is used).

Asymmetrical Loading Conditions

For unequally loaded chain slings, the following approach to permissible loads is recommended:

- A two-legged system is treated as a single-legged system.
- A three- or four-legged system is treated as a two-legged system.

Note! Different standards apply for Australia, see next page for further information.

Working Load Limits for Australia

WLL tonnes Grade 10 GrabiQ in Australia

Sling type	1-leg	1-leg	1-leg	2-, 3-, and 4-leg straight slings			2-, 3-, and 4-leg reeved slings
Condition of use	Straight	Adjustable	Reeved sling	60°	90°	120°	Max. 60°
Load factor	1	1	0.75	1.73	1.41	1	1.3
Chain size (mm)							
6	1.5	1.5	1.12	2.6	2.1	1.5	1.95
7	2.0	2.0	1.5	3.5	2.8	2.0	2.6
8	2.5	2.5	1.8	4.3	3.5	2.5	3.2
10	4.0	4.0	3.3	6.9	5.7	4.0	5.2
13	6.7	6.7	5.0	11.6	9.5	6.7	8.7
16	10.0	10.0	7.5	17.3	14.1	10.0	13.0
20	16.0	16.0	12.0	27.7	22.6	16.0	20.8
22	20.0	20.0	15.0	34.6	28.2	20.0	26.0
26	27.0	27.0	20.0	46.7	38.0	27.0	35.0
32	40.0	40.0	30.0	69.2	56.4	40.0	52.0

Sling type	Basket slings		Home pocket loop		
			1-leg	2-, 3- and 4-leg	
Condition of use	1-leg Max. 60°	2-leg Max. 60°	α max 30°	60° α max 30°	90° α max 30°
Load factor	1.3	2.25	1	1.73	1.4
Chain size (mm)					
6	1.95	3.3	1.5	2.6	2.1
7	2.6	4.5	-	-	-
8	3.2	5.6	2.5	4.3	3.5
10	5.2	9.0	4.0	6.9	5.7
13	8.7	15.0	6.7	11.6	9.5
16	13.0	22.5	10.0	17.3	14.1
20	20.8	36.0	-	-	-
22	26.0	45.0	-	-	-
26	35.0	60.75	-	-	-
32	52.0	90.0			

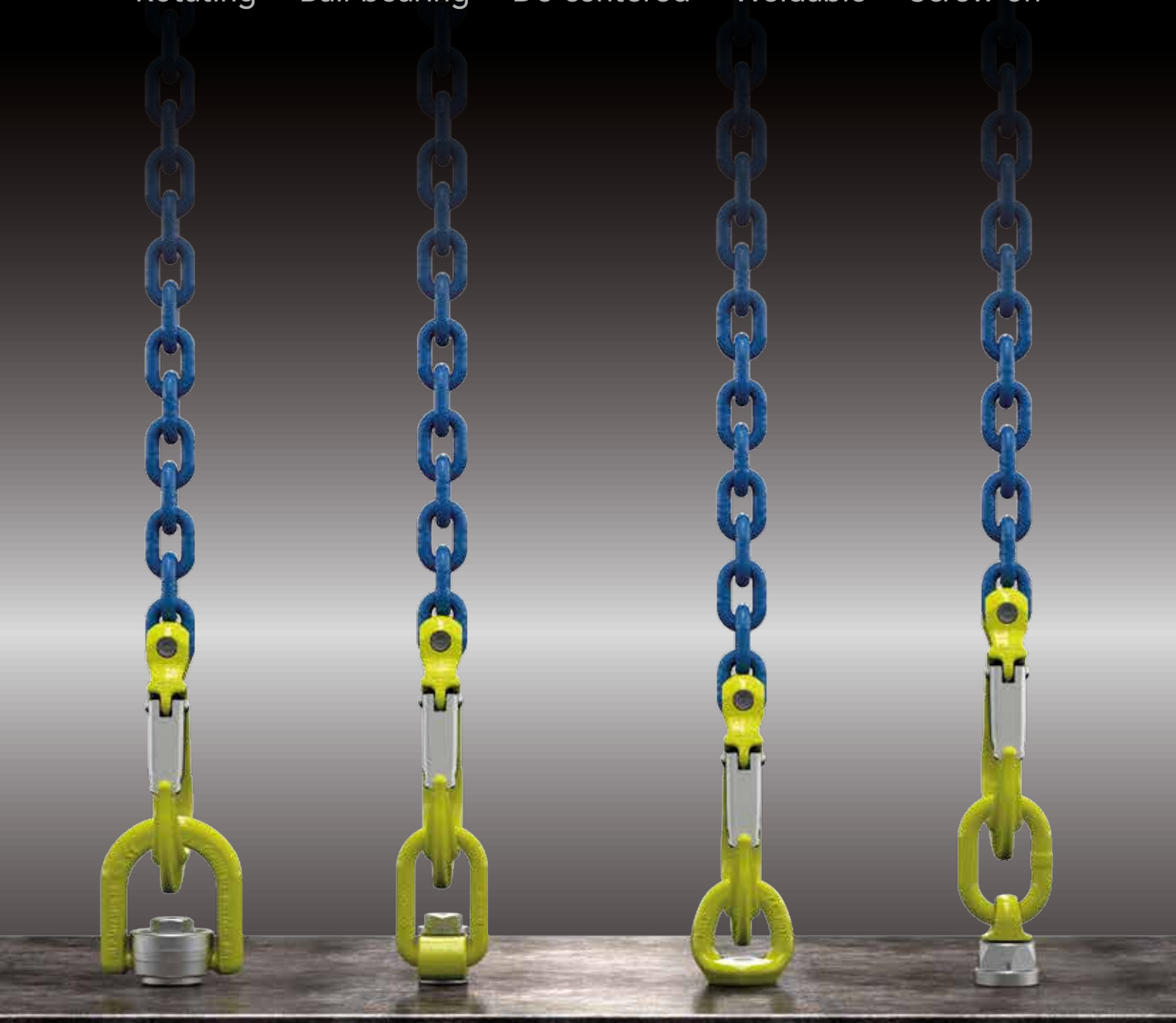
WLL tonnes Grade 8 Classic According to AS 3775.2:2014 (see Note 1)

								Endless sling	
Diam.	Direct load	Adjustable sling with deration	Reeved sling	Straight sling (see Note 2)			Reeved sling (see Note 2)	Basket hitch (see Note 2)	
				Max. 60°	90°	120°	60°	1-leg Max. 60°	2-leg Max. 60°
6	1.1	1.1	0.8	1.9	1.6	1.1	1.5	1.5	2.5
7	1.5	1.5	1.1	2.6	2.1	1.5	2.0	2.1	3.4
8	2.0	2.0	1.5	3.5	2.8	2.0	2.6	2.6	4.5
10	3.2	3.2	2.4	5.5	4.5	3.2	4.1	4.1	7.2
13	5.3	5.3	4.0	9.2	7.5	5.3	6.9	6.9	11.9
16	8.0	8.0	6.0	13.8	11.3	8.0	10.4	10.4	18
19	11.2	11.2	8.4	19.4	15.8	11.2	14.6	14.6	25.2
22	15.0	15.0	11.3	26.0	21.2	15.0	19.5	19.5	33.8
26	21.2	21.2	15.9	36.7	29.9	21.2	27.6	27.6	47.7
32	31.5	31.5	23.6	54.5	44.4	31.5	41.0	41.0	70.9

NOTE:
1) For engineered lifts, see Clause 7.2(b) in AS 3775.2-2014
2) The determination of the angle of the multi-leg sling is the largest included angle at the apex of the configuration.

Lifting Points

Rotating • Ball-bearing • De-centered • Weldable • Screw-on



GUNNEBO Industries

Lifting Points

WARNING:
Failure to read, understand and comply with the following instructions, working load limits and specifications in this publication may result in serious injury or damage to property.

The New Lifting Point Family

In June 2015 we introduced three new lifting points as well as a significantly improved existing lifting point. We now have a range that will fit most lifting and lashing applications and can offer a full system, from master link to lifting point.

Choosing the right lifting point for your operation can be tricky, most lifting points can be used for a lot of purposes. But in order to give some guidance, and what we consider best practice, we have created a cross-chart (as seen on next page) to be used as indication to which lifting point that might be best suited for your specific purpose.

Rotating Eye Lifting Point - RELP

The RELP is a compact and robust lifting point, ideal for top-mounting and when it is important to have quick and easy on-hooking. The bolt has a hexagon socket which makes it easy to mount and dismount but an even better feature is the marking. On the bolt itself information such as the working load limit, mounting torque and manufacturing ID is stamped so it's always available for the operator, should the conditions for the operation change.

The RELP will automatically adjust to the loading direction which decreases the risk to load it incorrectly and endangering the lifting operation. For sensitive load surfaces the RELP is ideal, as the connecting sling hook will be positioned mainly parallel to the load surface, thus completely avoiding the hook causing damage on impact on the load. CE marked.

Rotating Lifting Point - RLP

The RLP has an easily dismountable D-ring to enable assembly of roundsling, master link or hook directly onto the lifting point.

RLP has a hexagon bolt (RFID prepared) to make it easy to disassemble/assemble with a wrench. The bolt is also clearly marked with information such as working load limit, mounting torque and manufacturer ID so it's always available to the operator. The RLP rotates 360° and pivots 180°, making it strong, flexible and reliable. CE marked.

De-centered Lifting Point - DLP

The design of the DLP allows the link to be folded over the housing when idle, allowing the lifting point to be almost completely stowed away when not in use.

The closed, oblong link is also equipped with a "stay-up"-function for easy on-hooking, (sizes up to M24) especially when there is limited space. This saves both the load from damage due to impacts from the hook, as well as making rigging fast and easy. The DLP is ideal in narrow spaces, such as corners or edge position, as the housing has a compact design. The hexagon bolt (RFID prepared) makes it easy to mount and dismount the DLP. CE marked.

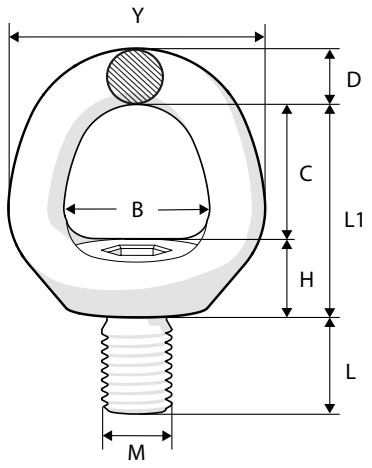
Ball-bearing Lifting Point - BLP

The BLP is a very versatile lifting point and can safely be used for most applications. The ball-bearings in the BLP allow the load to be rotated during the lift, which is especially good when maintenance is needed on heavy tools and other types of equipment.

If the load surface is sensitive to impacts or scratches, the BLP is a good choice as it builds out from the load which makes it less likely that the lifting equipment will come in contact with it causing damage. The housing (RFID prepared) of the BLP is in-house drop-forged for increased strenght and has a hexagon shape for easy mounting and dismounting. CE marked.

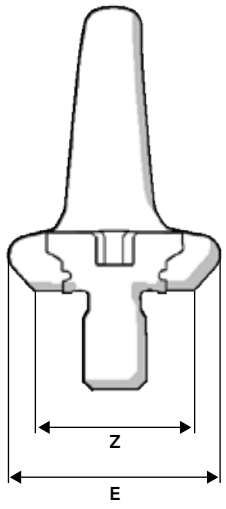
	RELP	RLP	DLP	BLP
Tight space	✓		✓	✓
Limited height (effective length)	✓	✓		
Vertical lift	✓	✓		✓
Angular lift		✓	✓	✓
Vertical rotation under load				✓
Tilting under load		✓	✓	✓
Sensitive load surface				✓
Single part lift	✓	✓		✓
Multiple part lift		✓	✓	✓
Integrated combination (hook or link)		✓		
RFID prepared		✓	✓	✓

This chart is intended to give guidance in choosing the right lifting point for your operation and is not rules for usage. For more advice contact your closest Gunnebo Industries dealer.



Rotating Eye Lifting Point RELP

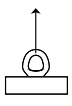
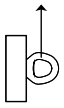
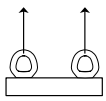
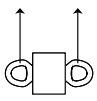
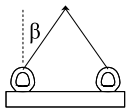
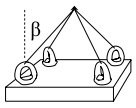
Art. no.	Code	Dimensions in mm										Weight kgs
		B	C	D	E	H	L	L1	M	Y	Z	
Z102408	RELP-M8 x 1.25	28	28	11	40	14	15	42	8	50	29	0.2
Z102410	RELP-M10 x 1.5	28	28	11	40	14	15	42	10	50	29	0.2
Z102412	RELP-M12 x 1.75	32	33	13	46	13	20	47	12	58	38	0.3
Z102416	RELP-M16 x 2	39	41	15	53	16	24	57	16	70	40	0.5
Z102420	RELP-M20 x 2.5	42	43	16	60	18	30	60	20	78	46	0.7
Z102424	RELP-M24 x 3	50	51	19	68	20	36	71	24	88	44	1.1
Z102430	RELP-M30 x 3.5	60	62	26	85	28	45	90	30	112	64	2.4
Z102436	RELP-M36 x 4	72	72	32	97	32	54	104	36	136	74	4.1
Z102442	RELP-M42 x 4.5	82	82	38	120	37	63	119	42	158	91	6.7
Z102448	RELP-M48 x 5	94	96	43	142	39	72	135	48	180	102	9.9



RELP with UNC thread

Art. no.	Code	Dimensions in m									M inch	Weight kgs
		B	C	D	E	H	L	L1	Y	Z		
Z102508	RELP 5/16"-18 UNC	28	28	11	40	14	15	42	50	29	5/16"	0.2
Z102510	RELP 3/8"-16 UNC	28	28	11	40	14	15	42	50	29	3/8"	0.2
Z102512	RELP 1/2"-13 UNC	32	33	13	46	13	20	47	58	38	1/2"	0.3
Z102516	RELP 5/8"-11 UNC	39	41	15	53	16	24	57	70	40	5/8"	0.5
Z102520	RELP 3/4"10 UNC	42	43	16	60	18	30	60	78	46	3/4"	0.7
Z102521	RELP 7/8"-9 UNC	42	43	16	60	18	30	60	78	46	7/8"	0.7
Z102524	RELP 1"-8 UNC	50	51	19	68	20	36	71	88	44	1"	1.1
Z102530	RELP 1 1/4"-7 UNC	60	62	26	85	28	45	90	112	64	1 1/4"	2.4
Z102536	RELP 1 1/2"-6 UNC	72	72	32	97	32	54	104	136	74	1 1/2"	4.1
Z102542	RELP 1 3/4"-5 UNC	82	82	38	120	37	63	119	158	91	1 3/4"	6.8
Z102548	RELP 2"-4.5 UNC	94	96	43	142	39	72	135	180	102	2"	10.0

Working Load Limits* - RELP

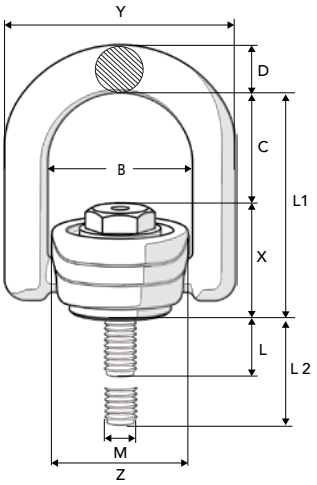
Symmetric Load (tonnes)										
No. of legs	1	1	2	2	2 symmetric		3 & 4 symmetric			
Angle ß	0°	90°	0°	90°	0-45°	45-60°	0-45°	45-60°	*Tightening torque*	*Allen key*
RELP -M8 x 1.25 RELP 5/16"-18 UNC	0.7 0.7	0.3 0.3	1.4 1.4	0.6 0.6	0.4 0.4	0.3 0.3	0.6 0.6	0.4 0.4	10 Nm 7 Ft.Lbs	8 mm 5/16"
RELP -M10 x 1.5 RELP 3/8"-16 UNC	1.2 1.2	0.5 0.5	2.4 2.4	1.0 1.0	0.7 0.7	0.5 0.5	1.0 1.0	0.7 0.7	15 Nm 11 Ft.Lbs	8 mm 5/16"
RELP -M12 x 1.75 RELP 1/2"-13 UNC	2.0 2.0	0.8 0.8	4.0 4.0	1.6 1.6	1.1 1.1	0.8 0.8	1.6 1.6	1.2 1.2	27 Nm 20 Ft.Lbs	8 mm 5/16"
RELP -M16 x 2 RELP 5/8"-11 UNC	3.5 3.5	1.5 1.5	7.0 7.0	3.0 3.0	2.1 2.1	1.5 1.5	3.1 3.1	2.2 2.2	60 Nm 44 Ft.Lbs	8 mm 5/16"
RELP -M20 x 2.5 RELP 3/4"-10 UNC RELP 7/8"-9 UNC	6.1 5.0 6.1	2.4 2.3 2.4	12.2 10.0 12.2	4.8 4.6 4.8	3.3 3.1 3.3	2.4 2.3 2.4	5.0 4.8 5.0	3.6 3.4 3.6	90 Nm 66 Ft.Lbs 66 Ft.Lbs	8 mm 5/16" 5/16"
RELP -M24 x 3 RELP 1"-8 UNC	8.1 8.1	3.3 3.3	16.2 16.2	6.6 6.6	4.6 4.6	3.3 3.3	6.9 6.9	4.9 4.9	135 Nm 100 Ft.Lbs	19 mm 3/4"
RELP -M30 x 3.5 RELP 1 1/4"-7 UNC	12.1 12.1	4.6 4.6	24.2 24.2	9.2 9.2	6.4 6.4	4.6 4.6	9.6 9.6	6.9 6.9	270 Nm 200 Ft.Lbs	19 mm 3/4"
RELP -M36 x 4 RELP 1 1/2"-6 UNC	16.1 16.1	7.1 7.1	32.2 32.2	14.2 14.2	9.9 9.9	7.1 7.1	14.9 14.9	10.6 10.6	320 Nm 236 Ft.Lbs	19 mm 3/4"
RELP -M42 x 4.5 RELP 1 3/4"-5 UNC	24 24	9.1 9.1	48 48	18.2 18.2	12.7 12.7	9.1 9.1	19.1 19.1	13.6 13.6	600 Nm 440 Ft.Lbs	19 mm 3/4"
RELP -M48 x 5 RELP 2"-4.5 UNC	32 32	12.1 12.1	64 64	24.2 24.2	16.9 16.9	12.1 12.1	25.4 25.4	18.1 18.1	800 Nm 590 Ft.Lbs	19 mm 3/4"

*Safety factor 4:1

Rotating Lifting Point RLP

Art. no. Standard bolt length	L	Art.no. Long bolt length**	L2	Code	Dimensions in mm B	C	D	L1	M	X	Y	Z	Weight kgs
Z101708	16	Z1017080L	101	RLP-M8 x 1.25	42	35	12	62	8	27	64	Ø40	0.3
Z101710	16	Z1017100L	101	RLP -M10 x 1.5	42	35	12	62	10	27	64	Ø40	0.3
Z101712	25	Z1017120L	120	RLP -M12 x 1.75	57	46	19	88	12	42	91	Ø54	1.0
Z101716	25	Z1017160L	160	RLP-M16 x 2	57	46	19	88	16	42	91	Ø54	1.0
Z101720	36	Z1017200L	200	RLP-M20 x 2.5	83	55	28	110	20	55	133	Ø80	2.9
Z101724	36	Z1017240L	240	RLP-M24 x 3	83	55	28	110	24	55	133	Ø80	2.9
Z101730	58	Z1017300L	300	RLP-M30 x 3.5	114	70	34	148	30	78	182	Ø111	7.1
Z101736	58	Z1017360L	300	RLP-M36 x 4	114	70	34	148	36	78	182	Ø111	7.3
Z101742	81	Z1017420L	301	RLP-M42 x 4.5	149	91	40.4	190	42	99	229	Ø142	14.3
Z101748	81	Z1017480L	301	RLP-M48 x 5	149	91	40.4	190	48	99	229	Ø142	14.5

** Long Bolt supplied with nut and washer.



3

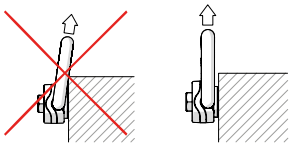
RLP with UNC thread

Art. no. Standard bolt length	L	Art.no. long bolt length**	L2	Code	Dimensions in mm B	C	D	L1	X	Y	Z	M inch	Weight kgs
Z101808	16	Z1018080L	101	RLP-5/16"-18 UNC	42	35	12	62	27	64	Ø40	5/16"	0.3
Z101810	16	Z1018100L	101	RLP-3/8"-16 UNC	42	35	12	62	27	64	Ø40	3/8"	0.3
Z101812	25	Z1018120L	120	RLP-1/2"-13 UNC	57	46	19	88	42	91	Ø54	1/2"	1.0
Z101816	25	Z1018160L	160	RLP-5/8"-11 UNC	57	46	19	88	42	91	Ø54	5/8"	1.0
Z101820	36	Z1018200L	200	RLP-3/4"-10 UNC	83	55	28	110	55	133	Ø80	3/4"	2.9
Z101821	36	Z1018210L	240	RLP-7/8"-9 UNC	83	55	28	110	55	133	Ø80	7/8"	2.9
Z101824	36	Z1018240L	240	RLP 1"-8 UNC	83	55	28	110	55	133	Ø80	1"	2.9
Z101830	58	Z1018300L	300	RLP 1 1/4"-7 UNC	114	70	34	148	78	182	Ø111	1 1/4"	7.1
Z101836	58	Z1018360L	300	RLP 1 1/2"-6 UNC	114	70	34	148	78	182	Ø111	1 1/2"	7.3
Z101842	81	Z1018420L	301	RLP 1 3/4"-5 UNC	149	91	40.4	190	99	229	Ø142	1 3/4"	14.4
Z101848	81	Z1018480L	301	RLP 2" -4.5 UNC	149	91	40.4	190	99	229	Ø142	2"	14.7

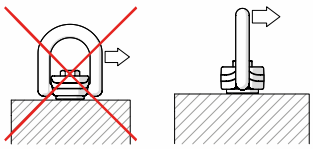
** Long Bolt supplied with nut and washer.

Disassembly of the RLP is made easy by just folding the D-ring forward and push down.

User advise



Make sure the D-ring does not lie against the load surface during lift



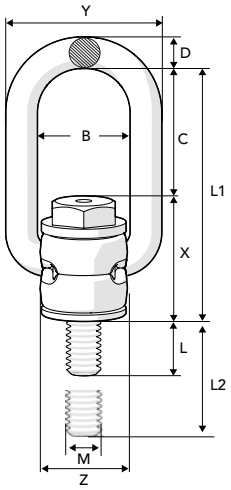
Never side-load the RLP

Working Load Limits* - RLP

Symmetric Load (tonnes)					β	β				
No. of legs	1	1	2	2	2 symmetric		3 & 4 symmetric			
Angle ß	0°	90°	0°	90°	0-45°	45-60°	0-45°	45-60°	Tightening torque	Spanner size
RLP - M8 x 1.25 RLP 5/16"-18 UNC	0.8 0.8	0.4 0.4	1.6 1.6	0.8 0.8	0.5 0.5	0.4 0.4	0.8 0.8	0.6 0.6	10 Nm 7 Ft.Lbs	13 mm 1/2"
RLP - M10 x 1.5 RLP 3/8"-16 UNC	1.2 1.2	0.7 0.65	2.4 2.4	1.4 1.3	0.9 0.9	0.7 0.6	1.4 1.3	1.0 0.9	15 Nm 11 Ft.Lbs	13 mm 1/2"
RLP - M12 x 1.75 RLP 1/2"-13 UNC	2.0 2.0	1.2 1.2	4.0 4.0	2.4 2.4	1.6 1.6	1.2 1.2	2.5 2.5	1.8 1.8	27 Nm 20 Ft.Lbs	24 mm 15/16"
RLP - M16 x 2 RLP 5/8"-11 UNC	3.2 3.2	2.0 2.0	6.4 6.4	4.0 4.0	2.8 2.8	2.0 2.0	4.2 4.2	3.0 3.0	60 Nm 44 Ft.Lbs	24 mm 15/16"
RLP - M20 x 2.5 RLP 3/4"-10 UNC RLP 7/8"-9 UNC	5.6 5.0 5.6	2.8 2.5 2.8	11.2 10.0 11.2	5.6 5.0 5.6	3.9 3.5 3.9	2.8 2.5 2.8	5.8 5.2 5.8	4.2 3.7 4.2	90 Nm 66 Ft.Lbs 66 Ft.Lbs	32 mm 1 5/16" 1 5/16"
RLP - M24 x 3 RLP 1"-8 UNC	9.2 9.2	4.6 4.6	18.4 18.4	9.2 9.2	6.4 6.4	4.6 4.6	9.6 9.6	6.9 6.9	135 Nm 100 Ft.Lbs	32 mm 1 5/16"
RLP - M30 x 3.5 RLP 1 1/4"-7 UNC	12.0 12.0	6.0 6.0	24.0 24.0	12.0 12.0	8.4 8.4	6.0 6.0	12.6 12.6	9.0 9.0	270 Nm 200 Ft.Lbs	55 mm 2 1/4"
RLP - M36 x 4 RLP 1 1/2"-6 UNC	14.0 14.0	8.0 8.0	28.0 28.0	16.0 16.0	11.2 11.2	8.0 8.0	16.8 16.8	12.0 12.0	320 Nm 236 Ft.Lbs	55 mm 2 1/4"
RLP - M42 x 4.5 RLP 1 3/4"-5 UNC	16.0 16.0	14.0 14.0	32.0 32.0	28.0 28.0	19.6 19.6	14.0 14.0	29.4 29.4	21.0 21.0	600 Nm 440 Ft.Lbs	75 mm 3"
RLP - M48 x 5 RLP 2" -4.5 UNC	20.0 20.0	16.0 16.0	40.0 40.0	32.0 32.0	22.4 22.4	16.0 16.0	33.6 33.6	24.0 24.0	800 Nm 590 Ft.Lbs	75 mm 3"

INCREASED WLL

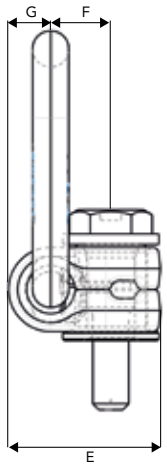
*Safety factor 4:1



De-centered Lifting Point DLP

Art. no. Standard bolt length	L	Art.no. Long bolt length**	L2	Code	Dimensions in mm B	C	D	E	F	G	L1	M	X	Y	Z	Weight Kgs
Z102208	13	Z1022080L	98	DLP-M8 x 1.25	35	48	10	39	14	10	78	8	30	55	26	0.3
Z102210	13	Z1022100L	98	DLP -M10 x 1.5	35	48	10	39	14	10	78	10	30	55	26	0.3
Z102212	23	Z1022120L	118	DLP -M12 x 1.75	35	48	12	51	20	14	91	12	44	59	32	0.5
Z102216	23	Z1022160L	158	DLP-M16 x 2	35	48	12	51	20	14	91	16	44	59	32	0.5
Z102220	34	Z1022200L	198	DLP-M20 x 2.5	54	88	18	71	28	18	145	20	58	90	48	1.6
Z102224	34	Z1022240L	238	DLP-M24 x 3	54	88	18	71	28	18	145	24	58	90	48	1.7
Z102230	53	Z1022300L	295	DLP-M30 x 3.5	82	94	26	104	39	27	182	30	88	122	75	5.0
Z102236	53	Z1022360L	295	DLP-M36 x 4	82	94	26	104	39	27	182	36	88	122	75	5.2
Z102242	73	Z1022420L	283	DLP-M42 x 4.5	100	103	36	136	54	34	216	42	113	156	110	11.6
Z102248	73	Z1022480L	283	DLP-M48 x 5	100	103	36	136	54	34	216	48	113	156	110	11.9

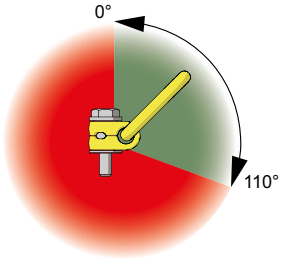
** Long Bolt supplied with nut and washer.



DLP with UNC thread

Art. no. Standard bolt length	L	Art.no. Long bolt length**	L2	Code	Dimensions in mm B	C	D	E	F	G	L1	X	Y	Z	M inch	Weight kgs
Z102308	13	Z1023080L	98	DLP-5/16"-18 UNC	35	48	10	39	14	10	78	30	55	26	5/16"	0.3
Z102310	13	Z1023100L	98	DLP-3/8"-16 UNC	35	48	10	39	14	10	78	30	55	26	3/8"	0.3
Z102312	23	Z1023120L	118	DLP-1/2"-13 UNC	35	48	12	51	20	14	91	44	59	32	1/2"	0.5
Z102316	23	Z1023160L	158	DLP-5/8"-11 UNC	35	48	12	51	20	14	91	44	59	32	5/8"	0.5
Z102320	34	Z1023200L	198	DLP-3/4"-10 UNC	54	88	18	71	28	18	145	58	90	48	3/4"	1.6
Z102321	34	Z1023210L	238	DLP-7/8"-9 UNC	54	88	18	71	28	18	145	58	90	48	7/8"	1.6
Z102324	34	Z1023240L	238	DLP-1"-8 UNC	54	88	18	71	28	18	145	58	90	48	1"	1.7
Z102330	53	Z1023300L	295	DLP- 1 1/4"-7 UNC	82	94	26	104	39	27	182	88	122	75	1 1/4"	5.5
Z102336	53	Z1023360L	295	DLP-1 1/2"-6 UNC	82	94	26	104	39	27	182	88	122	75	1 1/2"	5.7
Z102342	73	Z1023420L	283	DLP-1 3/4"-5 UNC	100	103	36	136	54	34	216	113	156	110	1 3/4"	11.7
Z102348	73	Z1023480L	283	DLP-2"- 4.5 UNC	100	103	36	136	54	34	216	113	156	110	2"	12.1

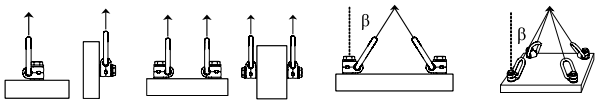
** Long Bolt supplied with nut and washer.



The DLP can only be loaded from 0 - 110 degrees. Rotation around screw axis when loaded at 0-15° is not allowed

Working Load Limits* - DLP

Symmetric Load (tonnes)

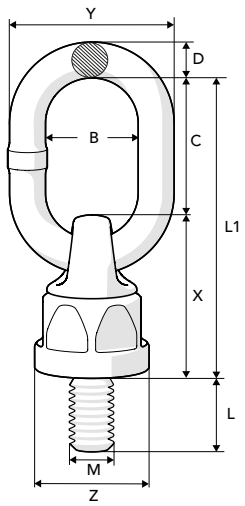


No. of legs	*1*	*2*	*2 symmetric*		*3 & 4 symmetric*			
Angle ß	*0°< ß < 90°*	*0°< ß < 90°*	*0-45°*	*45-60°*	*0-45°*	*45-60°*	*Tightening torque*	*Spanner size*
DLP -M8 x 1.25 DLP 5/16"-18 UNC	0.35 0.35	0.70 0.70	0.5 0.5	0.35 0.35	0.7 0.7	0.5 0.5	10 Nm 7 Ft.Lbs	13 mm 1/2"
DLP -M10 x 1.5 DLP 3/8"-16 UNC	0.65 0.60	1.30 1.20	0.9 0.8	0.65 0.60	1.4 1.3	1.0 1.0	15 Nm 11 Ft.Lbs	13 mm 1/2"
DLP -M12 x 1.75 DLP 1/2"-13 UNC	1.0 1.0	2.0 2.0	1.4 1.4	1.0 1.0	2.1 2.1	1.5 1.5	27 Nm 20 Ft.Lbs	24 mm 15/16"
DLP -M16 x 2 DLP 5/8"-11 UNC	1.8 1.6	3.6 3.2	2.5 2.2	1.8 1.6	3.7 3.3	2.7 2.4	60 Nm 44 Ft.Lbs	24 mm 15/16"
DLP -M20 x 2.5 DLP -3/4"-10 UNC DLP -7/8"-9 UNC	2.6 2.2 2.6	5.2 4.4 5.2	3.5 3.0 3.5	2.6 2.2 2.6	5.4 4.6 5.4	3.9 3.3 3.9	90 Nm 66 Ft.Lbs 66 Ft.Lbs	32 mm 1 5/16" 1 5/16"
DLP -M24 x 3 DLP -1"-8 UNC	4.1 4.1	8.2 8.2	5.7 5.7	4.1 4.1	8.6 8.6	6.1 6.1	135 Nm 100 Ft.Lbs	32 mm 1 5/16"
DLP -M30 x 3.5 DLP -1 1/4"-7 UNC	5.0 5.0	10.0 10.0	7.0 7.0	5.0 5.0	10.5 10.5	7.5 7.5	270 Nm 200 Ft.Lbs	55 mm 2 1/4"
DLP -M36 x 4 DLP -1 1/2"-6 UNC	7.0 7.0	14.0 14.0	9.8 9.8	7.0 7.0	14.7 14.7	10.5 10.5	320 Nm 236 Ft.Lbs	55 mm 2 1/4"
DLP -M42 x 4.5 DLP -1 3/4"-5 UNC	15.0 15.0	30.0 30.0	21.0 21.0	15.0 15.0	31.5 31.5	22.5 22.5	600 Nm 440 Ft.Lbs	75 mm 3"
DLP -M48 x 5 DLP -2"-4.5 UNC	20.0 20.0	40.0 40.0	28.0 28.0	20.0 20.0	42.0 42.0	30.0 30.0	800 Nm 590 Ft.Lbs	75 mm 3"

*Safety factor 4:1

Ball-bearing Lifting Point BLP

Art. no.	Code	Dimensions in mm B	C	D	L	L1	M	X	Y	Z	Weight kgs
Z102008	BLP-M8 x 1.25	35	55	13	16	112	8	57	61	Ø42	0.6
Z102010	BLP -M10 x 1.5	35	55	13	20	112	10	57	61	Ø42	0.6
Z102012	BLP -M12 x 1.75	35	55	13	24	112	12	57	61	Ø42	0.6
Z102016	BLP-M16 x 2	35	55	13	30	112	16	57	61	Ø42	0.6
Z102020	BLP-M20 x 2.5	34	57	17	30	132	20	75	67	Ø59	1.3
Z102024	BLP-M24 x 3	50	70	17	36	145	24	75	84	Ø59	1.5
Z102030	BLP-M30 x 3.5	54	96	22	45	102	30	106	99	Ø74	3.4
Z102036	BLP-M36 x 4	54	96	22	54	102	36	106	99	Ø74	3.5
Z102042	BLP-M42 x 4.5	70	120	28	63	242	42	122	127	Ø93	6.5
Z102048	BLP-M48 x 5	70	120	28	72	242	48	122	127	Ø93	6.8

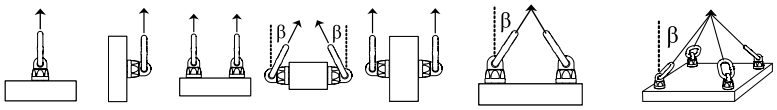


3

BLP with UNC thread

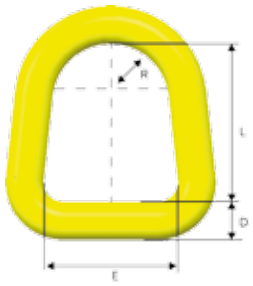
Art. no.	Code	Dimensions in mm B	C	D	L	L1	X	Y	Z	M inch	Weight kgs
Z102108	BLP-5/16"-18 UNC	35	55	13	16	112	57	61	Ø42	5/16"	0.6
Z102110	BLP-3/8"-16 UNC	35	55	13	20	112	57	61	Ø42	3/8"	0.6
Z102112	BLP-1/2"-13 UNC	35	55	13	24	112	57	61	Ø42	1/2"	0.6
Z102116	BLP-5/8"-11 UNC	35	55	13	30	112	57	61	Ø42	5/8"	0.6
Z102120	BLP-3/4"-10 UNC	34	57	17	30	132	75	67	Ø59	3/4"	1.3
Z102121	BLP-7/8"-9 UNC	34	57	17	30	132	75	67	Ø59	7/8"	1.3
Z102124	BLP-1"-8 UNC	50	70	17	38	145	75	84	Ø59	1"	1.5
Z102130	BLP-1 1/4"-7 UNC	54	96	22	48	202	106	99	Ø74	1 1/4"	3.4
Z102136	BLP-1 1/2"-6 UNC	54	96	22	57	202	106	99	Ø74	1 1/2"	3.6
Z102142	BLP-1 3/4"-5 UNC	70	120	28	67	242	122	127	Ø93	1 3/4"	6.6
Z102148	BLP-2"-4.5 UNC	70	120	28	76	242	122	127	Ø93	2"	7.0

Working Load Limits* - BLP



No. of legs	*1*	*1*	*2*	*2*	*2*	*2 symmetric*		*3 & 4 symmetric*			
Angle ß	0°	90°	0°	0-45°	90°	*0-45°*	45-60°	0-45°	45-60°	Tightening torque	Spanner size
BLP -M8 x 1.25	0.6	0.3	1.2	0.4	0.6	0.4	0.3	0.6	0.45	10 Nm	36 mm
BLP -5/16"-18 UNC	0.6	0.3	1.2	0.4	0.6	0.4	0.3	0.6	0.45	7 Ft.Lbs	1 1/2"
BLP -M10 x 1.5	1.2	0.6	2.4	0.8	1.2	0.8	0.6	1.3	0.90	15 Nm	36 mm
BLP -3/8"-16 UNC	1.0	0.5	2.0	0.7	1.0	0.7	0.5	1.1	0.75	11 Ft.Lbs	1 1/2"
BLP -M12 x 1.75	1.5	0.75	3.0	1.1	1.5	1.1	0.75	1.5	1.1	27 Nm	36 mm
BLP -1/2"-13 UNC	1.5	0.75	3.0	1.1	1.5	1.0	0.75	1.5	1.1	20 Ft.Lbs	1 1/2"
BLP -M16 x 2	3.0	1.5	6.0	2.1	3.0	2.1	1.5	3.1	2.2	60 Nm	36 mm
BLP -5/8"-11 UNC	3.0	1.5	6.0	2.1	3.0	2.1	1.5	3.1	2.2	44 Ft.Lbs	1 1/2"
BLP -M20 x 2.5	5.0	2.5	10.0	3.5	5.0	3.5	2.5	5.2	3.7	90 Nm	50mm
BLP -3/4"-10 UNC	4.5	2.25	9.0	3.1	4.5	3.1	2.25	4.7	3.3	66 Ft.Lbs	2"
BLP -7/8"-9 UNC	6.0	3.0	12.0	4.2	6.0	4.2	3.0	6.3	4.5	66 Ft.Lbs	2"
BLP -M24 x 3	7.0	4.0	14.0	5.6	8.0	5.6	4.0	8.4	6.0	135 Nm	50mm
BLP -1"-8 UNC	7.0	4.0	14.0	5.6	8.0	5.6	4.0	8.4	6.0	100 Ft.Lbs	2"
BLP -M30 x 3.5	12.0	6.0	24.0	8.4	12.0	8.4	6.0	12.6	9.0	270 Nm	65 mm
BLP -1 1/4" -7 UNC	12.0	6.0	24.0	8.4	12.0	8.4	6.0	12.6	9.0	200 Ft.Lbs	2 5/8"
BLP -M36 x 4	14.0	8.0	28.0	11.2	16.0	11.2	8.0	16.8	12.0	320 Nm	65 mm
BLP -1 1/2" -6 UNC	14.0	8.0	28.0	11.2	16.0	11.2	8.0	16.8	12.0	236 Ft.Lbs	2 5/8"
BLP -M42 x 4.5	16.0	10.0	32.0	14.0	20.0	14.0	10.0	21.0	15.0	600 Nm	85 mm
BLP -1 3/4" -5 UNC	16.0	10.0	32.0	14.0	20.0	14.0	10.0	21.0	15.0	440 Ft.Lbs	3 1/8"
BLP -M48 x 5	18.0	13.0	36.0	18.2	26.0	18.2	13.0	27.3	19.5	800 Nm	85 mm
BLP -2"-4.5 UNC	18.0	13.0	36.0	18.2	26.0	18.2	13.0	27.3	19.5	590 Ft.Lbs	3 1/8"

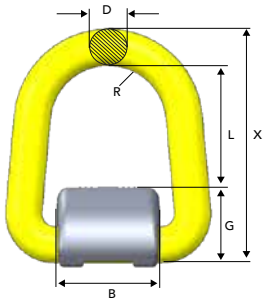
*Safety factor 4:1



Master Link D

Art. no.	Code	WLL tonnes*	E	D	L	R	Weight kgs
Z7008771	D-14-10	2.5	55	14	65	24	0.4
Z7008781	D-17-10	4.0	64	17	62	29	0.5
Z7008801	D-22-10	8.0	76	22	90	33	1.0
Z7831791	D-27-10	10.0	85	27	98	38	1.9
Z7831792	D-32-10	16.0	114	32	139	50	3.5

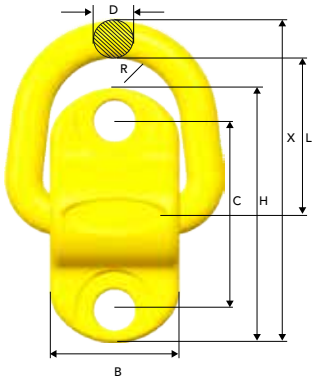
The load bearing width must be at least 0.5 x E



Weldable Lifting Point WLP

Art. no.	Code	WLL tonnes*	B	D	G	L	R	X	Weight kgs
Z7009001	WLP-2.5T	2.5	50	14	27	53	24	95	0.5
Z7009011	WLP-4T	4.0	58	17	34	48	29	97	0.8
Z7009021	WLP-7T	7.0	64	22	41	73	33	135	1.8
Z7009031	WLP-10T	10.0	65	27	52	73	38	152	3.4
Z7009041	WLP-16T	16.0	90	32	66	105	50	203	8.5

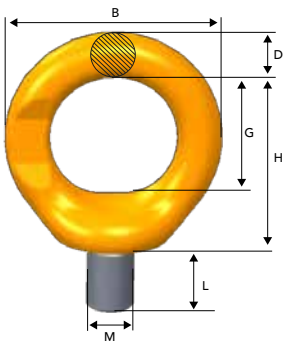
Supplied with spring for stay up function



Screw-on Lifting Point SLP

Art. no.	Code	WLL tonnes*	B	C	D	H	L	M	X	R	Weight kgs
Z7009881	SLP-1T	1.0	50	72	14	98	55	M14	139	24	0.8
Z7009871	SLP-3T	3.0	58	84	17	114	50	M16	144	29	1.3
Z7009861	SLP-5T	5.0	64	116	22	160	74	M20	203	33	2.6

Supplied with spring for stay up function



Eye Lifting Point ELP

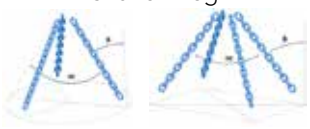
Art. no.	Code	WLL tonnes*	B	D	G	H	L	M	Weight kgs
Z100434	ELP-16-8	1.0**	72	16	42	55	24	M16	0.4
Z100435	ELP-20-8	1.5**	72	16	42	58	30	M20	0.4
Z100436	ELP-24-8	2.0**	88	19	48	69	36	M24	0.9
Z100437	ELP-30-8	3.0**	106	22	60	84	45	M30	1.4

** In case of 1-leg application where loading is limited to straight loading in the direction of thread (no bending force) it is possible to use ELP with four times higher WLL. Note! Threaded depths need to be at least 1xM for steel, 1,25xM for cast iron and 2xM for aluminium alloy.

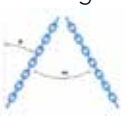
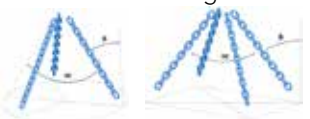
*Safety factor 4:1

Dimensions in mm

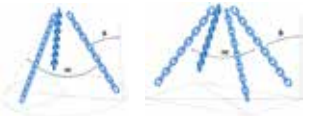
Working Load Limits (tonnes) for WLP

	1-leg	2-leg		3- and 4-leg	
					
Typ	WLL tonnes*	α 0-90° β 0-45°	α 90-120° β 45-60°	α 0-90° β 0-45°	α 90-120° β 45-60°
WLP-2.5T	2.5	3.5	2.5	5.25	3.75
WLP-4T	4.0	5.6	4.0	8.4	6.0
WLP-7T	7.0	9.8	7.0	14.7	10.5
WLP-10T	10.0	14.0	10.0	21.0	15.0
WLP-16T	16.0	22.4	16.0	33.6	24.0

Working Load Limits (tonnes) for SLP

	1-leg	2-leg		3- and 4-leg	
					
Typ	WLL tonnes*	α 0-90° β 0-45°	α 90-120° β 45-60°	α 0-90° β 0-45°	α 90-120° β 45-60°
SLP-1T	1.0	1.4	1.0	2.1	1.5
SLP-3T	3.0	4.2	3.0	6.3	4.5
SLP-5T	5.0	7.0	5.0	10.5	7.5

Working Load Limits (tonnes) for ELP

	1-leg	2-leg		3- and 4-leg	
					
Typ	WLL tonnes*	α 0-90° β 0-45°	α 90-120° β 45-60°	α 0-90° β 0-45°	α 90-120° β 45-60°
ELP-16-8	1.0**	1.4	1.0	2.1	1.5
ELP-20-8	1.5**	2.1	1.5	3.2	2.3
ELP-24-8	2.0**	2.8	2.0	4.2	3.0
ELP-30-8	3.0**	4.2	3.0	6.3	4.5

Note! The above loads apply to normal usage and equally loaded legs. For asymmetric loaded chain slings, the following is recommended:

- A two-legged system is rated as a single-legged system.
- A three- or four-legged system is rated as a two-legged system.

** In case of 1-leg application where loading is limited to straight loading in the direction of thread (no bending force) it is possible to use ELP with four times higher WLL. Note! Threaded depths need to be at least 1xM for steel, 1,25xM for cast iron and 2xM for aluminium alloy.

*Safety factor 4:1

Shackles & Rigging Screws

Dee and Bow • Arctic • Aquaculture • ROV
• Stainless Steel

GUNNEBO
Industries

Shackle

Rigging Screw

Technical Information, Shackle

WARNING:
Failure to read, understand and comply with the following instructions, working load limits and specifications in this publication may result in serious injury or damage to property.

Feel Confident in Every Situation

Our lifting systems are valued for their long durability and high quality. Whether the working environment is hot or cold, our systems assure lifting operations with high safety and functionality.

Gunnebo Industries shackles are made from a range of steel qualities, including acid proof stainless steel and high grade alloy steel to comply with the most stringent specifications. Our workshops comprise all facilities and systems for the manufacturing and control of a top quality product. This includes tool design, an advanced tool shop, forging, heat treatment, machining, hot dip galvanizing and quality control.

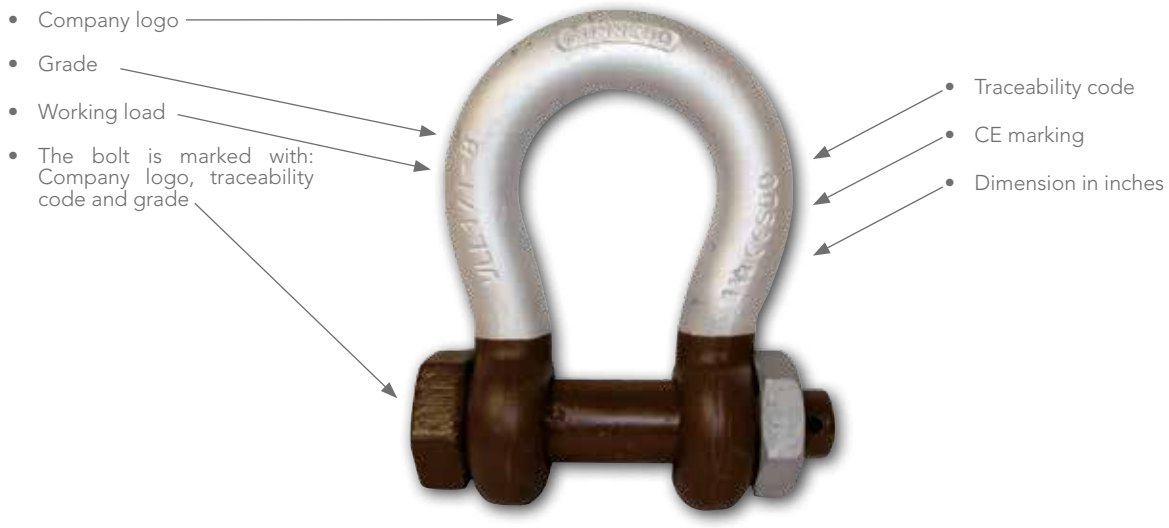
We offer a range of DNV 2.7-1 Type approved lifting shackles for offshore containers, developed for the tough conditions of the offshore industry, where safety must be of the highest priority at all times. The heat treatment of these products ensures the proper ductility and strength to sustain shock loads which may be imposed when the container is lifted from the deck of a vessel.

Furthermore we offer Standard shackles, Super lifting shackles with increased working load limit, ROV shackles, Heavy duty shackles, Wide-Body shackles, Mooring shackles, Stainless Steel shackles etc.

Make sure you have the original

- High quality shackles acc. EN 13889 and U.S. Fed.Spec RR-C. 271 (grade A and grade B)
- Consistent product quality
- Long experience of shackle production using modern manufacturing methods
- Local availability of expertise from Gunnebo Industries subsidiary or distributors

To ensure you have a genuine Gunnebo Industries Shackle, it should be marked as below:



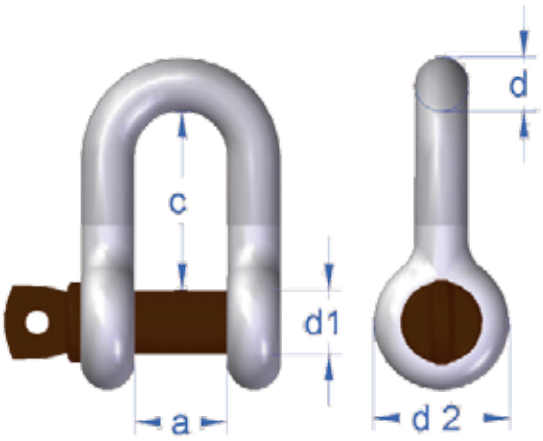
Product documentation

Upon request at time of order, load rated products can be supplied with the following documents:

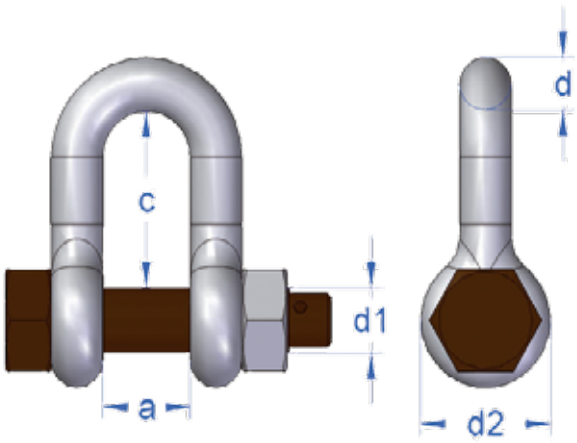
- Works certificate acc. EN 10204 - 2.1
- Sample certificate of raw material acc. EN 10204 - 3.1
- Test certificate
- Traceable raw material / inspection certificate acc. EN 10204 - 3.1
- Third party proof load documentation

Dee Shackle No 834 and No 835

Standard:	DNV 2.7-1 Type Approved, EN 13889 and U.S Fed. Spec. RR-C-271
Material:	High Tensile Carbon Steel, Quenched and tempered, Grade 6
Finish:	All parts hot dip galvanized, pin brown painted on top of galv.
Safety factor:	6:1
Documentation:	Test certificate and traceable raw material / inspection certificate acc. EN 10204 - 3.1. Sizes from 2 - 55 tonnes can be supplied with DNV 2.7-1 Type Approval Certification.
Temperature:	-20°C to 200°C



Shackle No 834 with screw pin



Shackle No 835 with safety bolt

Art. no. Screw pin	Art. no. Safety bolt	WLL tonnes 6:1	Dim. d1	d Trade size		Inner width a*	Inner length c*	Eye outer d2	Screw pin kgs	Safety bolt kgs
				mm	inch					
A083405	-	0.33	6	5	3/16"	10	22	13	0.02	-
A083406	-	0.5	8	7	1/4"	12	25	12	0.06	-
A083408	-	0.75	10	9	5/16"	13.5	27	16	0.11	-
A083409	-	1.0	11	10	3/8"	17	31	20	0.15	-
A083411	-	1.5	13	11	7/16"	18.5	37	22	0.21	-
A083413	A083513	2.0	16	13	1/2"	21	41	33	0.25	0.30
A083416	A083516	3.25	19	16	5/8"	27	51	40	0.55	0.60
A083419	A083519	4.75	22	19	3/4"	31	60	47	1.00	1.10
A083422	A083522	6.5	25	22	7/8"	37	71	52	1.30	1.50
A083425	A083525	8.5	28	25	1"	43	81	60	1.90	2.20
A083428	A083528	9.5	32	28	1 1/8"	46	90	64	2.80	3.10
A083432	A083532	12.0	35	32	1 1/4"	52	100	72	3.60	4.20
A083435	A083535	13.5	38	35	1 3/8"	57	111	74	4.60	5.60
A083438	A083538	17.0	42	38	1 1/2"	60	122	84	6.50	7.50
A083445	A083545	25.0	50	45	1 3/4"	74	149	105	11.50	13.00
A083452	A083552	35.0	57	50	2"	83	171	112	16.00	18.00
-	A083564	55.0	70	65	2 1/2"	105	203	145	-	39.00

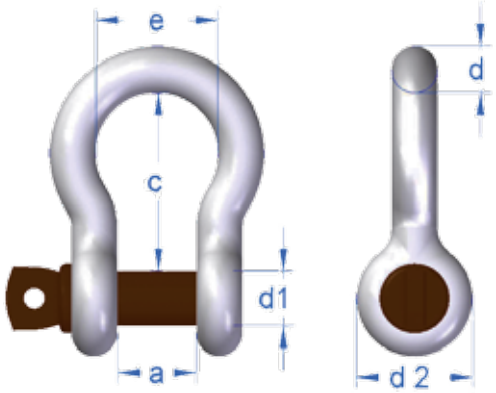
* Forging tolerance: +/- 5% on inside width/length.

Split pin included

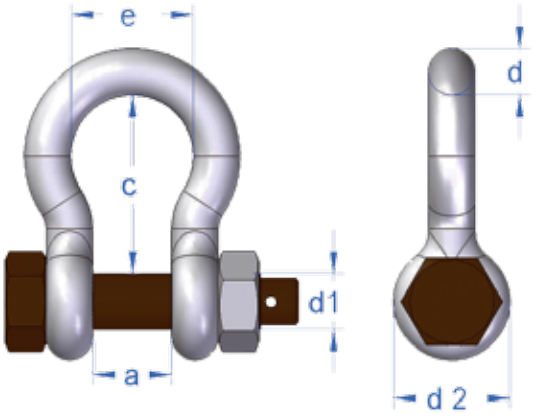
All dimensions in mm

Bow Shackle No 854 and No 855

Standard:	DNV 2.7-1 Type Approved, EN 13889 and U.S Fed. Spec. RR-C-271
Material:	High Tensile Carbon Steel, Quenched and tempered, Grade 6
Finish:	All parts hot dip galvanized, brown painted bolts on top of galv.
Safety factor:	6:1
Documentation:	Test certificate and traceable raw material / inspection certificate acc. EN-10204 - 3.1. Sizes from 2 - 85 tonnes can be supplied with DNV 2.7-1 Type Approval Certification.
Temperature:	-20°C to 200°C



Shackle No 854 with screw pin



Shackle No 855 with safety bolt

Art. no. Screw pin	Art. no. Safety bolt	WLL tonnes 6:1	Dim. d1	d Trade size mm	d Trade size inch	inner width a*	inner length c*	Bow width e	Eye outer d2	Screw pin kgs	Safety bolt kgs
A085405	-	0,33	6	5	3/16"	10	22	16	13	0.02	-
A085406	A085506	0.5	8	6	1/4"	12	29	20	16	0.06	0.07
A085408	A085508	0.75	10	8	5/16"	13	32	21	20	0.11	0.13
A085409	A085509	1.0	11	9	3/8"	16	36	26	22	0.15	0.17
A085411	A085511	1.5	13	11	7/16"	18	43	29	26	0.21	0.25
A085413	A085513	2.0	16	13	1/2"	21	47	33	33	0.37	0.42
A085416	A085516	3.25	19	16	5/8"	27	60	42	40	0.65	0.70
A085419	A085519	4.75	22	19	3/4"	31	71	49	47	1.10	1.20
A085422	A085522	6.5	25	22	7/8"	37	84	60	52	1.50	1.70
A085425	A085525	8.5	28	25	1"	43	95	68	60	2.21	1.50
A085428	A085528	9.5	32	28	1 1/8"	46	108	74	64	3.10	3.40
A085432	A085532	12.0	35	32	1 1/4"	52	119	83	72	4.20	4.80
A085435	A085535	13.5	38	35	1 3/8"	57	132	89	74	6.00	7.00
A085438	A085538	17.0	42	38	1 1/2"	60	146	98	84	8.00	9.00
A085445	A085545	25.0	50	45	1 3/4"	74	178	127	105	13.50	15.00
A085452	A085552	35.0	57	50	2"	83	197	138	112	19.00	21.00
-	A085556	42.5	65	57	2 1/4"	95	222	160	132	-	28.50
A085464	A085564	55.0	70	65	2 1/2"	105	255	185	145	38.00	39.00
-	A085576	85.0	83	75	3"	127	330	190	165	-	62.00
-	**A085589	120 (5:1)	95	95	3 3/4"	146	400	235	208	-	110.00

* Forging tolerance: +/- 5% on inside width/length.
** Safety factor 5:1

Split pin included

All dimensions in mm

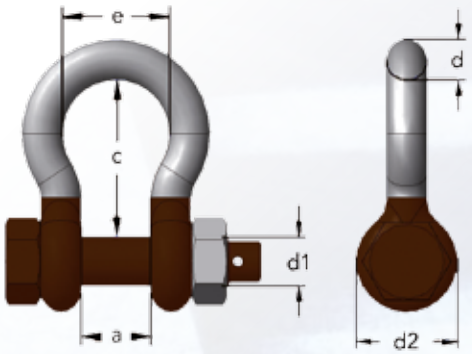
Arctic Shackle No 856

Bow shackle with safety bolt

Unique Benefits with The Arctic Shackle

Adverse weather and rough sea conditions in combination with extremely low temperatures, as often encountered in the North Sea for instance, places tough requirements on the products used. Gunnebo Industries has a range of shackles specially designed for these conditions. The Arctic Shackle is type approved to DnV 2.7-1 Offshore containers and meets the impact requirements of 42 J at – 40 degrees ^{O}C.
The Arctic Shackle is a grade 8 shackle with all parts hot dipped galvanized, including the safety bolt, and has the characteristic brown colour marking.

Standard:	DNV 2.7-1, U.S. Fed. Spec. RR.C-271 and EN-13889
Material:	Special Alloy Steel, Quenched and Tempered, Grade 8
Finish:	All parts hot dip galvanized + brown colour marking
Safety factor:	As specified in the table below
Documentation:	Test certificate and traceable raw material / inspection certificate acc. EN-10204 - 3.1 All sizes can be supplied with DNV 2.7-1 Type Approval Certification.
Temperature:	- 40 ^{O}C to 200 ^{O}C



Art. no.	WLL tonnes	Dim. d1	d Trade size		a	c	d 2	e	Weight kgs	Safety factor
			mm	inch						
A085613	2.0	16	13	1/2"	21	47	33	33	0.42	8.00
A085616	3.25	19	16	5/8"	27	60	40	42	0.7	8.00
A085619	4.75	22	19	3/4"	31	71	47	49	1.2	8.00
A085622	6.5	25	22	7/8"	37	84	52	60	1.7	7.85
A085625	8.5	28	25	1"	43	95	60	68	2.5	7.25
A085628	9.5	32	28	1 1/8"	46	108	64	74	3.4	6.94
A085632	12.0	35	32	1 1/4"	52	119	72	83	4.8	6.40
A085635	13.5	38	35	1 3/8"	57	132	74	89	7	6.10
A085638	17.0	42	38	1 1/2"	60	146	84	98	9	6.00
A085645	25.0	50	45	1 3/4"	74	178	105	127	15	6.00
A085652	35.0	57	50	2"	83	197	119	138	21	6.00
A085664	55.0	70	65	2 1/2"	105	255	145	185	39	6.00
A085676	85.0	83	75	3"	127	330	165	190	62	6.00

Split pin included

All dimensions in mm

Super Shackle No 858

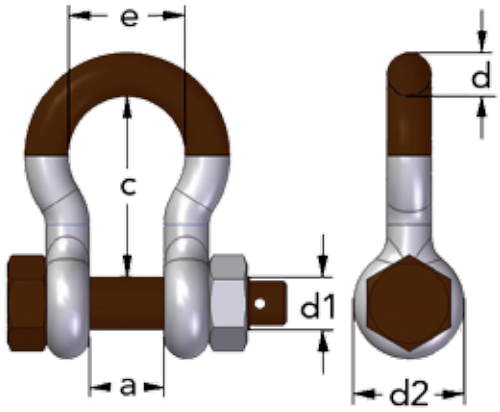
Bow shackle with safety bolt

Unique Benefits with The Super Shackle

In certain situations, a demand for extra Working Load Limit occurs, in others the lifting environment has limited space for the lifting application. Gunnebo Industries has therefore added the Super Shackle to the range, enabling the same Working Load Limit on a 22 mm Super shackle as for a 28 mm Standard shackle.

The Super shackle meets the US Federal Specification RR.C-271. It is a grade 8 shackle and has all parts hot dipped galvanized, including the safety bolt.

Standard:	U.S. Fed. Spec. RR.C-271 Type IVA Class 3, Grade B
Material:	High Tensile Steel. Quenched and Tempered, Grade 8
Finish:	All parts hot dip galvanized + brown colour marking
Safety factor:	5:1
Documentation:	Test certificate and traceable 3.1 certificate



Art.no	WLL tonnes	Dim. d1	d Trade size		a	c	d2	e	Weight kgs
			mm	inch					
A085813	3.3	16	13	1/2"	21	51	33	33	0.4
A085816	5.0	19	16	5/8"	27	60	40	42	0.7
A085819	7.0	22	19	3/4"	31	71	47	49	1.2
A085822	9.5	25	22	7/8"	37	84	52	60	1.7
A085825	12.5	28	25	1"	43	95	60	68	2.5
A085828	15.0	32	28	1 1/8"	46	108	64	74	3.4
A085832	18.0	35	32	1 1/4"	52	119	72	83	4.8
A085835	21.0	38	35	1 3/8"	57	132	74	89	7
A085838	30.0	42	38	1 1/2"	60	146	84	98	8.8
A085845	40.0	50	45	1 3/4"	74	178	105	127	15
A085857	55.0	57	57	2"	83	197	117	138	22
A085870	85.0	70	70	2 1/2"	105	260	143	180	38
A085883	120.0	83	83	3"	127	329	162	190	70
A085895	150.0	95	95	3 1/2"	144	400	208	238	112

Split pin included

All dimensions in mm

Aquaculture

Because safety is everything

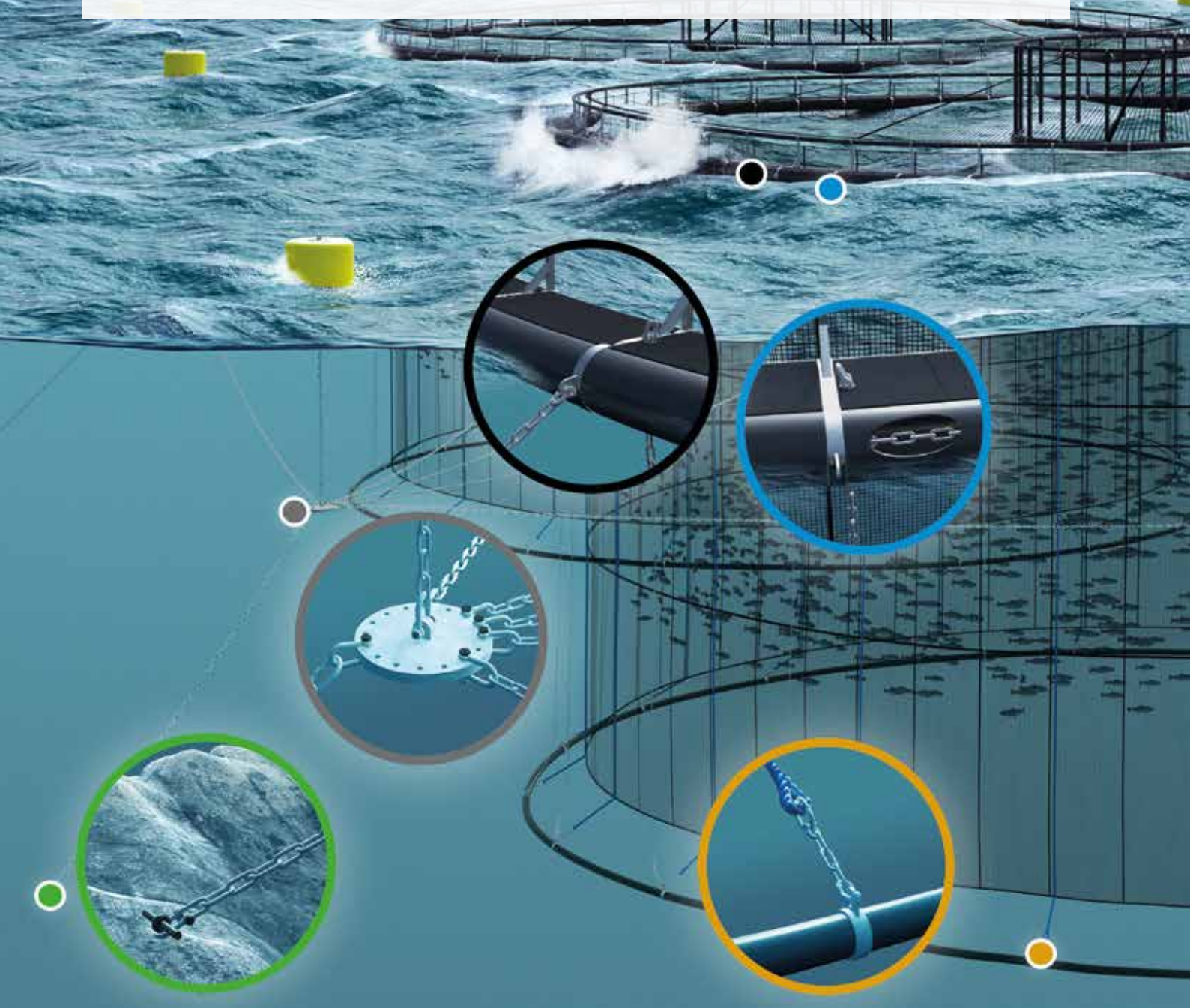
Gunnebo Industries have an in-depth knowledge of the demands aquaculture puts on the products supplied. With over 100 years of experience gained manufacturing shackles and chain for maritime use, which allows us to provide our clients with the highest level of satisfaction, even in the most extreme environments.

Whilst other producers have been focusing on low cost to the detriment of performance, we have focused on quality and improved properties to give best value for money. Products such as our HDG (Hot Dip Galvanized) chain and shackles are designed to satisfy the specific demands from the global fishing industry.

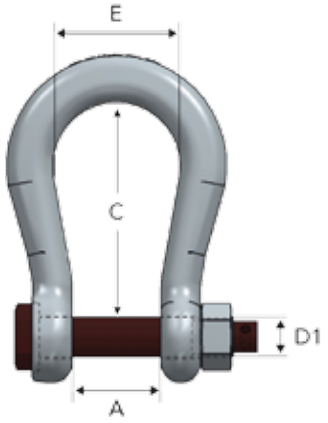
Gunnebo Industries products are the best choice when safety and quality comes first. We have always and will continue to provide the Aquaculture industry with the preferred products available on the market. All of our aquaculture products are independently approved according to Norwegian standard NS 9415. NS 9415 with this being the first national standard for aquaculture mooring systems.

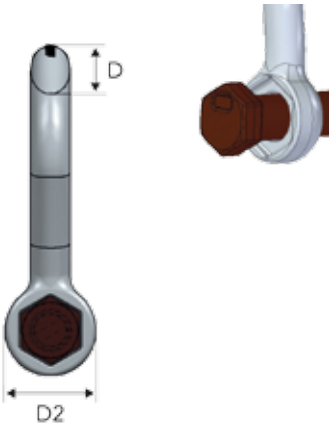
Our continuous focus on quality has been proven by our achievements with the key industry standards:

- Approved acc ISO 9001
- Approved acc ISO 14001
- Product certification acc. NS 9415



Mooring Shackle No 852





Unique Benefits with Mooring Shackle

The Mooring Shackle has a sunken bolt that locks into the shackle to prevent rotation (unintentional loosening of the nut). The sunken bolt also reduces the risk of the shackle interacting with the net. Fatigue resistance is increased by the addition of 25% extra material in the bow (increased life span and safety).
The shackle has a spacious bow for connecting thimbles, rope and mooring/connecting plates.

Standard: Third party approved acc. to relevant Norwegian aquaculture standards

Material: High Tensile Steel. Quenched and Tempered, Grade 6

Finish: All parts hot dip galvanized + brown colour marking

Plastic clip provided as standard safety pin for 28T - 90T,
Stainless steel A4 split pins provided as standard for 110T and 150T

Art.no	MBL tonnes	D Trade size		A	C	E	D2	D1
		mm	inch					
A085219	28	19	3/4"	44	100	58	48	22
*A085222	40	22	7/8"	52	125	68	52	25
*A085228	60	28	1 1/8"	62	150	89	64	28
*A085232	90	32	1 1/4"	82	170	98	72	32
A085242	110	42	1 5/8"	112	200	150	90	45
A085245	150	45	1 3/4"	126	248	175	105	50

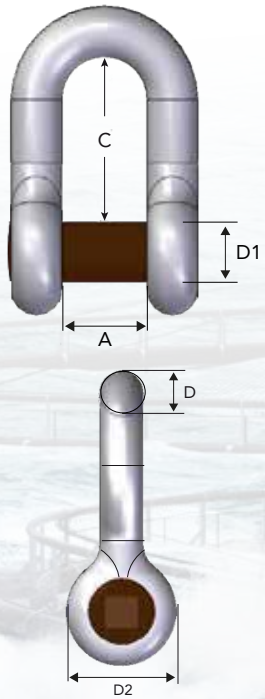
* These sizes come with a sunken hexagon bolt head that will greatly reduce the risk of the bolt unscrewing in service as well as making the fitting easier for the user.

Customized securing options

- Clips (28T to 40T) - Yellow
- Clips (60T to 90T) - Green
- Plastic covered seizing wire
- Plastic covered steel wire
- Stainles steel cotter pin

NEW

Countersunk Shackle No 830



Standard: Third party approved acc. to relevant Norwegian aquaculture standards

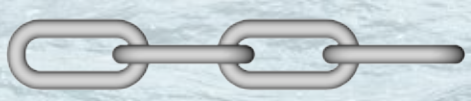
Material: High Tensile Steel. Quenched and Tempered, Grade 6

Finish: All parts hot dip galvanized + brown colour marking

Art.no	Art.no*	WLL tonnes	Dim. D		A	C	D1	D2
			mm	inch				
A083013	A083013DP	2.0	13	1/2"	21	41	16	33
A083016	A083016DP	3.25	16	5/8"	27	51	19	40
A083019	A083019DP	4.75	19	3/4"	31	60	22	48
A083022	A083022DP	6.5	22	7/8"	37	71	25	52
A083025	A083025DP	8.5	25	1"	43	81	28	60

* Countersunk Shackles can also be supplied with a secondary securing for Double Protection (DP), for mooring applications.

Long link Chain LLZ - see chapter 5



All dimensions in mm

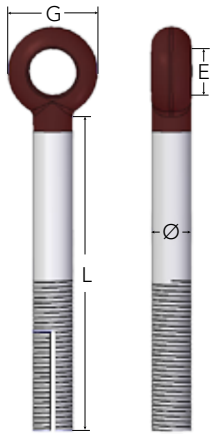
Mooring bolt - Eye Bolt No 8250

Standard: Third party approved acc. to relevant Norwegian aquaculture standards

Material: High Tensile Steel. Quenched and Tempered, Grade 6

Finish: All parts hot dip galvanized + brown colour marking

Art.no	MBL tonnes	Dim Ø x L	G	E
A825032	40	Ø32 x 400	72	37
A825038	60	Ø38 x 500	84	44
A825045	80	Ø45 x 600	105	47



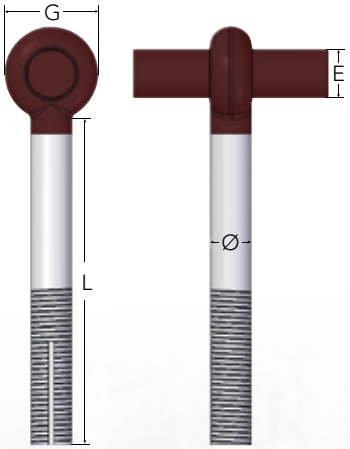
Mooring bolt - T-bolt No 8252

Standard: Third party approved acc. to relevant Norwegian aquaculture standards

Material: High Tensile Steel. Quenched and Tempered, Grade 6

Finish: All parts hot dip galvanized + brown colour marking

Art.no	MBL tonnes	Dim Ø x L	G	E
A825232	40	Ø32 x 400	72	35
A825235	50	Ø35 x 400	76	38
A825238	60	Ø38 x 500	84	42
A825245	80	Ø45 x 600	105	45
A825250	100	Ø50 x 700	110	50



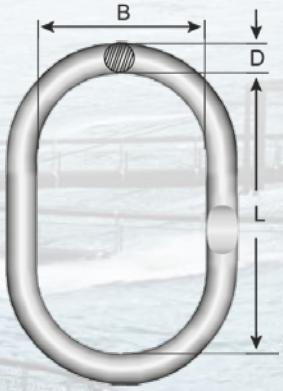
Galvanized Master Link

Standard: Third party approved acc. to relevant Norwegian aquaculture standards

Material: High Tensile Steel. Quenched and Tempered, Grade 6

Finish: All parts hot dip galvanized

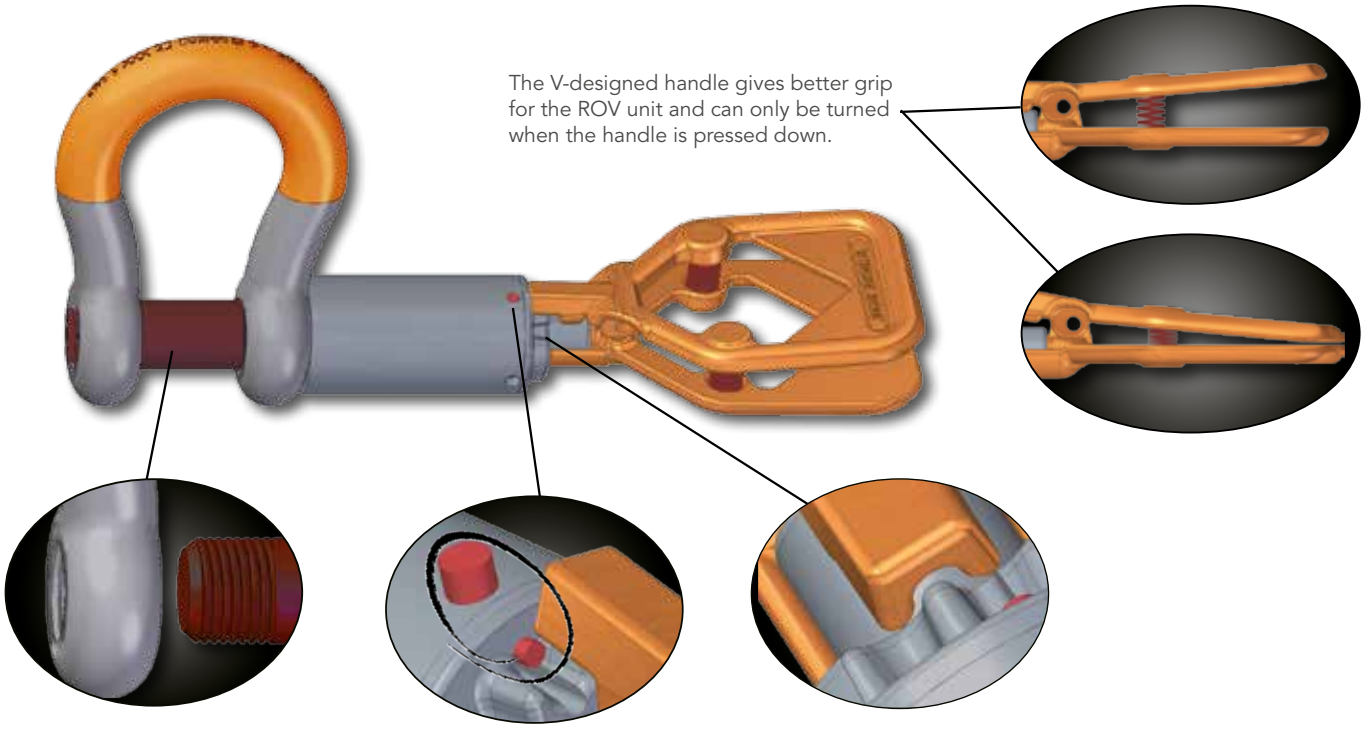
Art.no	MBL tonnes	Dim Ø - D	B	L
A825922	40	Ø22	95	160
A825928	60	Ø28	110	190
A825934	80	Ø34	140	240
A825940	110	Ø40	150	250



All dimensions in mm

ROV Shackles

The ROV Retrieve Shackle is designed for smooth and easy use in retrieving and releasing subsea lifting and rigging operations. It has no loose parts, in closed or opened position, and there is therefore no need for wires or monkey fists that will risk snagging or getting in the way.
The high visibility handles are close-die forged and has double safety functions - shark tooth locking with indicator that will show if the shackle is in open or locked position as well as the spring loaded handle. The handle is the same size, regardless of size of shackle.
The ROV Retrieve Shackle no. 861 is an easy to operate shackle, saving valuable time and money.



The V-designed handle gives better grip for the ROV unit and can only be turned when the handle is pressed down.

Tapered bolt end for easy attachment.

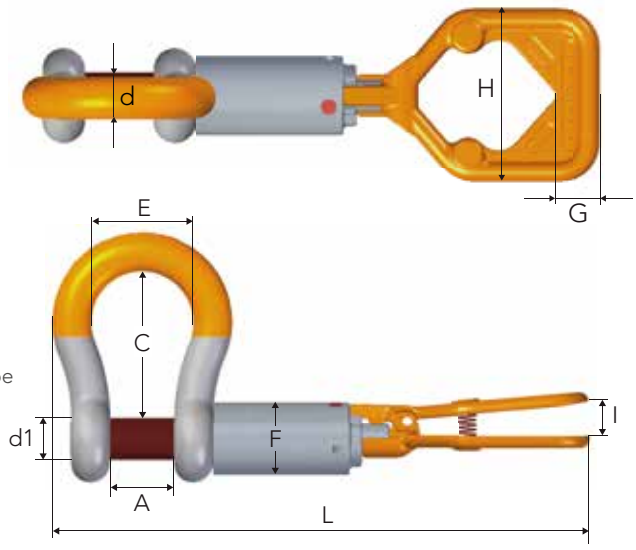
Indicator for open and closed position

"Shark tooth" locking

ROV Retrieve Shackle No 861

All shackles have unique marking

Standard:	Dim. according to EN 13889
Material:	High Tensile Steel, Quenched and Tempered
Finish:	All load bearing parts hot dip galvanized
Safety factor:	6:1
Documentation:	Test certificate and traceable 3.1 certificate can be supplied on request
Temperature:	-40 °C to 200 °C



Art. no	WLL tonnes	d1	d	A	C	E	F	L	I	H	G	Weight kg
A086132	12.0	35	32	52	119	83	60	460	31	132	33	8.0
A086138	17.0	42	38	60	146	98	63.5	501	31	132	33	10.5
A086145	25.0	50	45	74	178	127	70	565	31	132	33	16.5
A086152	35.0	57	50	83	197	138	76	604	31	132	33	20.5
A086164	55.0	70	65	105	255	185	88	712	31	132	33	42.0

All dimensions in mm

ROV Shackle No 860

Threaded bolt with one locking pin

Standard: Dim. according to EN 13889

Material: High Tensile Steel, Quenched and Tempered

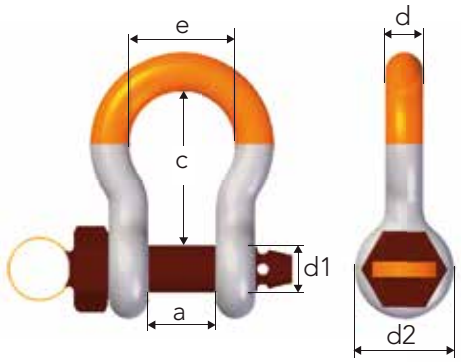
Finish: All load bearing parts hot dip galvanized

Safety factor: 6:1

Documentation: Test certificate and traceable 3.1 certificate can be supplied on request

Temperature: -40 °C to 200 °C

Art. no.	WLL tonnes	d1	d	a	c	d2	e	Weight kgs
A086028	9.5	32	28	46	108	64	74	3.4
A086032	12.0	35	32	52	119	72	83	5.0
A086038	17.0	42	38	60	146	84	98	7.8
A086045	25.0	50	45	74	178	105	127	13.9
A086052	35.0	57	50	83	197	127	138	17.0
A086064	55.0	70	65	105	255	152	185	37.0



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ROV Release Shackle No 863

Equipped with bolt and 2 locking pins

Standard: Dim. according to EN 13889

Material: High Tensile Steel, Quenched and Tempered

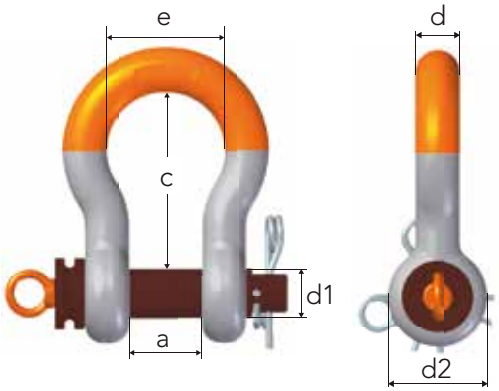
Finish: All load bearing parts hot dip galvanized

Safety factor: 5:1

Documentation: Test certificate and traceable 3.1 certificate can be supplied on request

Temperature: -40 °C to 200 °C

Art. no.	WLL tonnes	d1	d	a	c	d2	e	Weight kgs
A086322	6.5	25	22	37	84	52	58	1.6
A086328	9.5	32	28	46	108	64	74	3.4
A086332	12.0	35	32	52	119	72	83	5.0
A086338	17.0	42	38	60	146	84	98	7.8
A086345	25.0	50	45	74	178	105	127	13.9
A086352	35.0	57	50	83	197	127	138	17.0
A086364	55.0	70	65	105	255	152	185	37.0

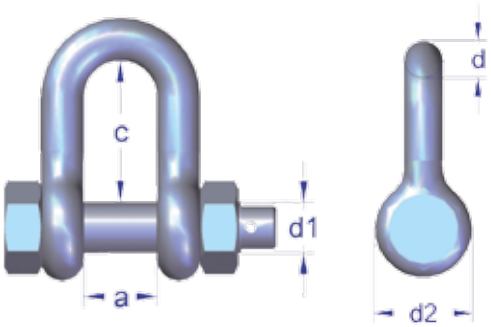


All dimensions in mm

Stainless Steel Shackle No 735

Dee shackle with safety bolt

Material: AISI 316
Finish: Highly Polished
Safety factor: 6:1
Documentation: Test certificate and traceable 3.1 certificate can be supplied



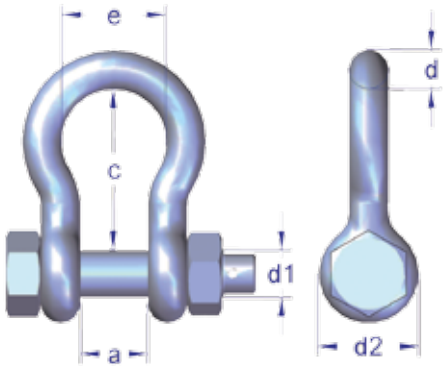
Art. no.	WLL tonnes	d1	d	a	c	d2	Weight kgs
A073510	0.6	10	10	20	38	20	0.2
A073512	0.9	12	12	26	50	24	0.3
A073516	1.5	16	13	24	52	33	0.4
A073520	2.5	19	16	28	65	40	0.7
A073522	3.0	22	19	31	60	48	1.5
A073524	4.5	25	22	37	71	52	1.3
A073533	7.5	32	28	46	90	64	3.0
A073536	10.0	35	32	52	100	72	4.1

Split pin included

Stainless Steel Shackle No 755

Bow shackle with safety bolt

Material: AISI 316
Finish: Highly Polished
Safety factor: 6:1
Documentation: Test certificate and traceable 3.1 certificate can be supplied



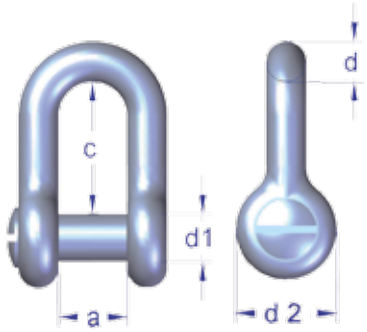
Art. no.	WLL tonnes	d1	d	a	c	e	d2	Weight kgs
A075510	0.6	10	10	20	36	27	20	0.2
A075512	0.9	12	12	25	47	37	26	0.3
A075516	1.5	16	13	25	47	33	33	0.4
A075520	2.5	20	16	28	60	42	40	0.8
A075522	3.0	22	19	31	71	51	48	1.3
A075524	4.5	25	22	37	84	58	52	1.7
A075533	7.5	32	28	46	108	74	64	3.4
A075536	10.0	35	32	52	119	83	72	5.2

Split pin included

Stainless Steel Shackle No 732

Dee shackle with countersunk pin

Material: AISI 316
Finish: Highly Polished
Safety factor: 6:1
Documentation: Test certificate



Art. No.	WLL tonnes	Dim. d1 mm	d1	d	a	(c)	d2	Weight kgs
A073216	2.0	M16	16	13	24	52	32	0.3
A073217	2.0	M16	16	16	32	64	32	0.3
A073220	3.0	M20	20	16	28	65	40	0.6
A073222	3.0	M22	22	19	31	60	46	1.4

All dimensions in mm

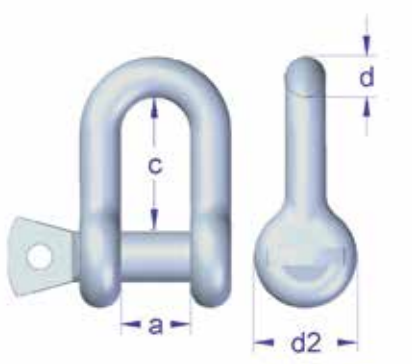
Stainless Steel Shackle No 730

Dee shackle with screw pin

Material: AISI 316

Art. no.	MBL tonnes	Dim. d1 mm	d	a	c	d2	Weight kgs
A073004		M4	4	8	15	9	0.01
A073005	1.2	M5	5	10	17	10	0.01
A073006	1.8	M6	6	12	24	12	0.03
A073008	2.8	M8	8	16	30	16	0.06
A073010	4.3	M10	10	20	38	20	0.1
A073012	6.5	M12	12	26	50	24	0.2
A073016	12.0	M16	13	24	52	33	0.3
A073020	16.0	M20	16	28	65	40	0.6
A073022	20.0	M22	19	30	72	48	0.9

Not certified for lifting



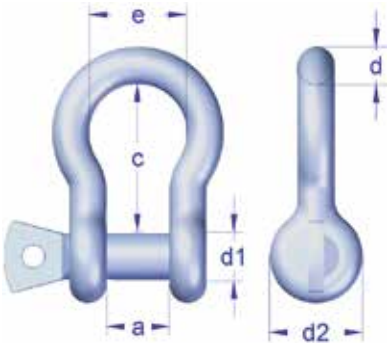
Stainless Steel Shackle No 750

Bow shackle with screw pin

Material: AISI 316

Art. no.	MBL tonnes	Dim. d1 mm	d1	d	a	c	e	d2	Weight kgs
A075004		M4	4.0	4	8	18	13	9	0.01
A075005	1.2	M5	5.0	5	10	18	15	10	0.02
A075006	1.8	M6	6.0	6	12	22	17	12	0.03
A075008	2.8	M8	8.0	8	16	30	23	16	0.07
A075010	4.3	M10	10.0	10	20	36	27	20	0.11
A075012	6.5	M12	12.0	12	25	47	37	26	0.25
A075016	12.0	M16	13.0	13	25	47	33	33	0.33
A075020	16.0	M20	16.0	16	28	60	42	40	0.96
A075022	20.0	M22	19.0	19	31	71	51	48	1.0

Not certified for lifting



4

Shackle SA

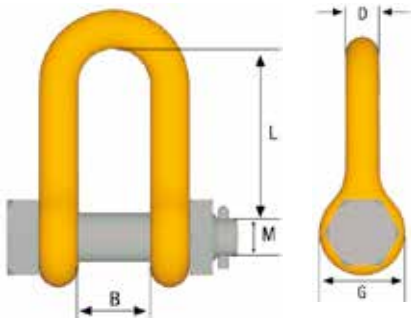
Grade 8

EN 1677-1

Finish: Painted yellow
Material: Alloy steel
Safety factor: 4:1

Art. no.	Code	WLL tonnes	For chain dim. mm	L	B	D	G	M	Weight kgs appr.
Z100706	SA-7/8-8	2.0	7, 8	30	15	8	20	M10	0.1
Z298728	SA-10-8	3.2	10	52	24	13	35	M16	0.4
Z292528	SA-13-8	5.4	13	65	28	16	42	M20	0.7
Z293024	SA-16-8	8.0	16	72	30	18	46	M22	1
Z299622	SA-19-8	11.5	19	86	36	22	55	M27	1.7
Z294122	SA-22-8	15.5	22	94	40	25	62	M30	2.5
Z304328	SA-26-8	21.6	26	116	48	32	75	M39	5.2

Split pin included



Clevis Shackle GSA

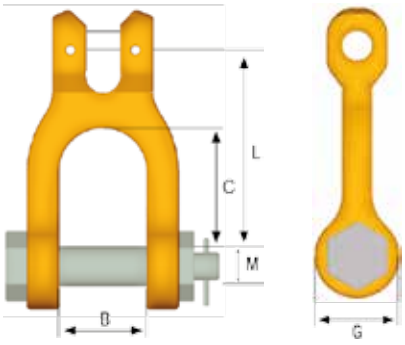
Grade 8

EN 1677-1

Finish: Painted yellow
Material: Alloy steel
Safety factor: 4:1

Art. no.	Code	WLL tonnes	For chain dim. mm	B	C	G	L	M	Weight kgs appr.
Z700882	GSA-7/8-8	2.0	7, 8	32	36	34	60	16	0.4
Z700883	GSA-10-8	3.15	10	34	48	40	80	20	0.8
Z700884	GSA-13-8	5.3	13	50	65	44	98	22	1.4
Z700885	GSA-16-8	8.0	16	60	70	54	114	27	2.4

Split pin included

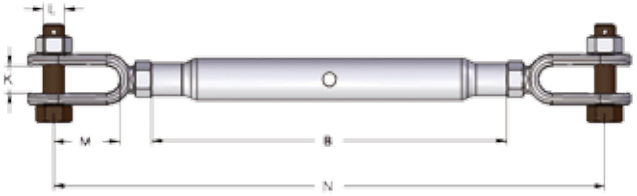


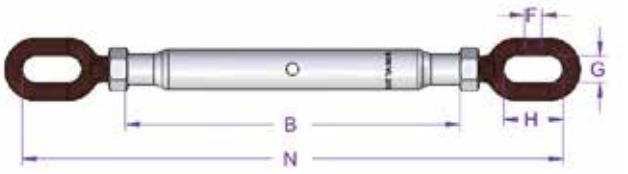
All dimensions in mm

Alloy Steel Rigging Screw, No 801, 802, 804

Grade 6

Standard: Working load acc. to U.S. Fed. spec. FF-T-791.b
Supplied with closed body from 2,5-17 T, larger dimensions open body.
Material: Quenched and tempered alloy steel
Surface treatment: Hot dip galvanized
Safety factor: 5:1
Certificate: Test certificate and traceable 3.1 certificate can be supplied on request.
Tolerances: +/- 5%



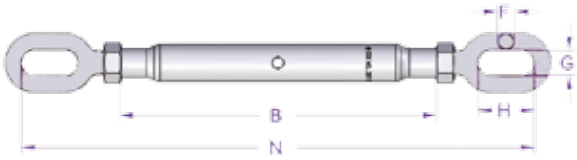


Art. no. Jaw/Jaw	Art. no. Jaw/Eye	Art. no. Eye/Eye	Thread M/UNC	WLL tonnes	Take up range mm	B	N	K	L	M	F	G	H	Weight kgs/ea
A801420	A802420	A804420	M 20	2.5	210	270	455	20	16	50	13	21	45	2.3
A801424	A802424	A804424	M 24	5.0	250	340	570	28	22	65	19	28	56	4.6
A801432	A802432	A804432	1.1/4"	7.0	270	370	680	38	28	85	22	35	70	8.0
A801438	A802438	A804438	1.1/2"	10.0	300	420	790	45	32	100	25	40	78	14.0
A801445	A802445	A804445	1.3/4"	13.0	360	500	870	50	39	105	30	45	90	24.0
A801450	A802450	A804450	2"	17.0	450	600	1030	58	45	120	35	45	100	38.0
A801464			*2.1/2"	27.2	534	780	1312	75	57	142				88.0
A801470			*2.3/4"	34.0	576	780	1418	90	70	145				98.0

* Open turnbuckle body without nut and split pin

Rigging Screw No 401, 402 - Hot Dip Galvanized

Design: Jaw-Jaw (jaw-eye and eye-eye on request)
Standard: Acc.to B.S. 4429, closed body - with locking nut
Material: St. 42/St. 52, normalized
Surface treatment: Hot dip galvanized (M6 & M8 zinc plated)
Safety factor: 5:1
Note: The items marked with * below are not for lifting
Tolerances: +/-5%



Art. no. Jaw/ Jaw	Art. no. Jaw/ Eye	Art.no Eye/Eye	Thread M/ UNC	WLL tonnes	Take up range (mm)	B	N	L	M	K	F	G	H	Weight kg/pcs
	*A402406		M 6	-	80	100	175	5	18	8	5	10	10	0.13
	*A402408		M 8	-	85	110	210	6	21	9	6	12	12	0.25
A401510	*A402410	*A404410	M 10	0.5	90	125	225	8	20	9.5	7	13	13	0.3
A401512	*A402412	*A404412	M 12	0.7	155	195	315	10	30	13	10	14	28	0.65
A401516	*A402416	*A404416	M 16	1.2	185	230	380	12	44	18	12	18	45	1.25
A401520	A402420	A404520	M 20	1.5	210	270	450	16	50	20	13	21	45	2.2
A401422	A402422	A404422	M 22	2.2	230	295	500	20	60	25	16	24	50	3.3
A401424	A402424	A404424	M 24	3.2	250	325	555	22	65	28	19	28	56	4.6
A401432	A402432	A404432	1.1/4"	4.8	290	370	680	28	85	38	22	35	70	8.5
A401438	A402438	A404438	1.1/2"	6.0	300	400	760	32	100	45	25	40	90	14.5
A401445	A402450	A404445	1.3/4"	8.5	290	400	760	38	105	50	30	45	90	20.9
A401452	A402452	A404452	2"	11.0	290	400	820	45	120	58	35	45	100	24.0

All dimensions in mm

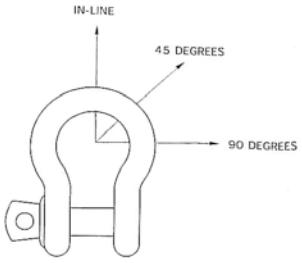
Technical Information

2006/42/EC highlights the responsibility of the manufacturer, distributor and end user of lifting gear.
Gunnebo Industries shackles are specified, monitored and documented in compliance with the most stringent requirements for the product concerned. A certified ISO 9001:2008 system is an evidence of our quality standard.

Instructions For Safe Use

1. The user is obliged to keep a valid Test Certificate for any shackle being used in a lifting operation.
2. Before use each shackle should be inspected to ensure that:
   - all markings in the body and the pin of the shackle are legible and in compliance with the relevant Test Certificate.
   - the shackle pin is of the correct type.
   - the body and pin are not distorted or unduly worn.
   - The body and pin are free from nicks, cracks, grooves and corrosion.
   - If there is any doubt with regards to the above criteria being met, the shackle should not be used for a lifting operation.
3. It is important to ensure that the pin is safely locked after assembly. For repeated lifting between inspections of the gear, it is recommended to use a safety bolt type shackle with nut and split-pin - the user must ensure that the split-pin is fitted, to prevent the nut from unscrewing during use.
4. Incorrect seating of a pin may be due to a bent pin, damaged threads or misalignment of the holes. Do not use the shackle under these circumstances, but refer the matter to a competent person (i.e. dealer, manufacturer)
5. Shackles should be fitted to the load in a manner that allows the shackle body to take the load in a true line along its centreline to avoid undue bending stresses which will reduce the load capacity of the shackle. When using shackles in conjunction with multi-leg slings, due consideration should be given to the effect of the angle between the sling legs. When a shackle is used to secure the top block of a set of rope blocks the load on this shackle is increased by the value of the hoisting effect.
6. To avoid eccentric loading of the shackle it is recommended to distribute the load as for as possible over the total length of the pin or to use loose spacers.
7. Never modify, repair or reshape a shackle by welding, heating or bending as this will affect the nominal WLL.
8. Never heat treat a shackle as this may affect the WLL.

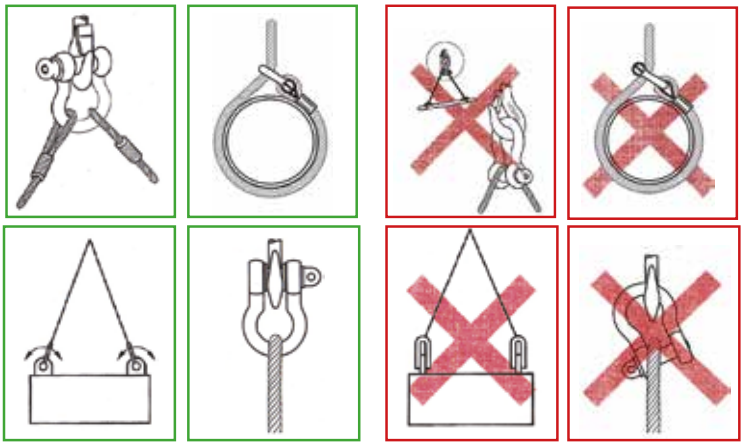
Side loads should be avoided as the products are not designed for this purpose. If side loads cannot be avoided, the following reduction factors must be taken into account:



Reduction for side loading

Load angle	New Working Load Limit
0°	100% of original WLL
45°	70% of original WLL
90°	50% of original WLL

Avoid applications where, due to load movement, the shackle pin can rotate



Shackle must be loaded in straight direction

Temperature

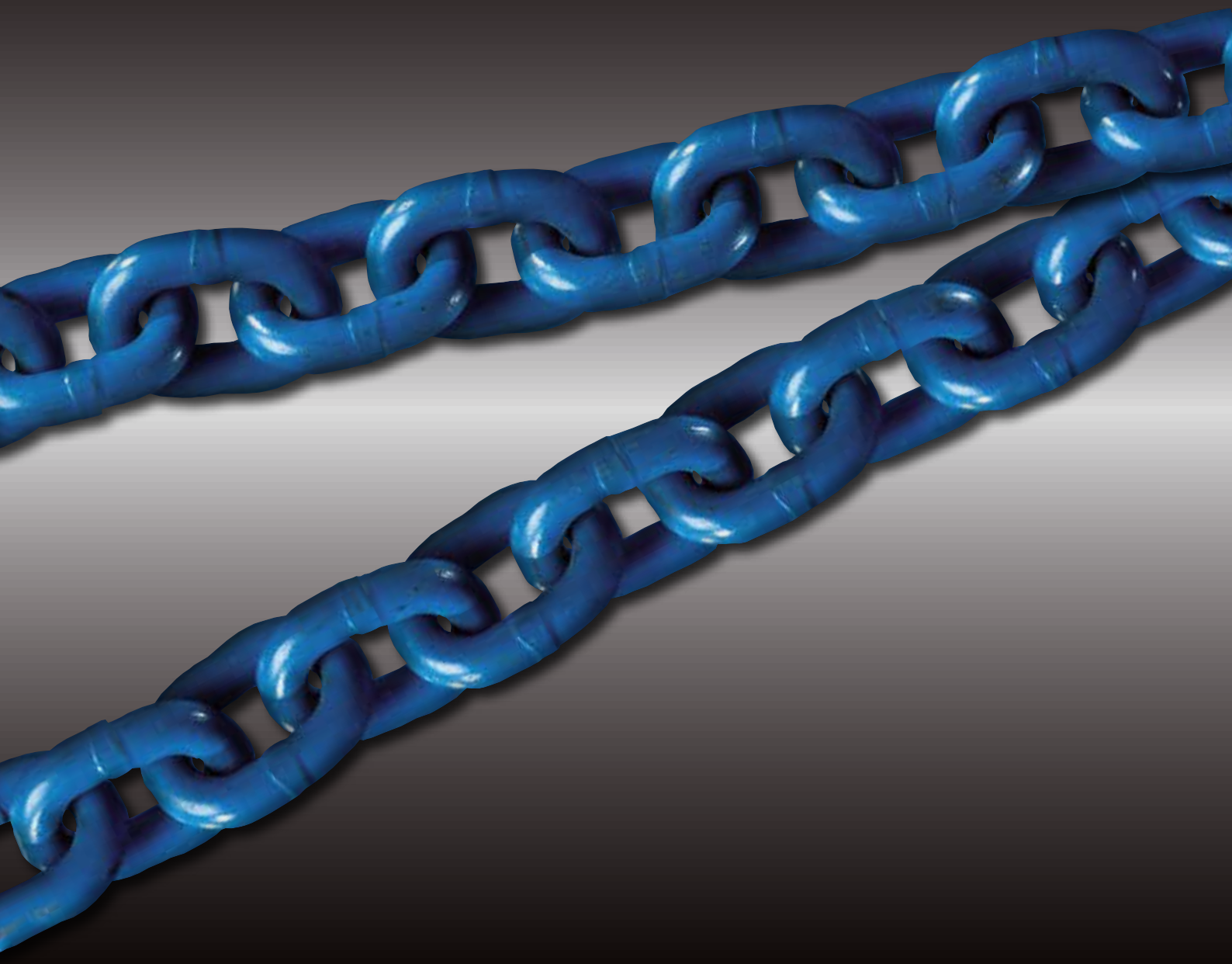
If extreme temperature situations are applicable, the following load reductions must be taken into account

Reduction for elevated temperatures

Temperature:	New Working Load Limit
0 - 200 °C	100% of original Working Load Limit
200 - 300 °C	90% of original Working Load Limit
300 - 400 °C	75% of original Working Load Limit
> 400 °C	not allowed

Chain

Grade 10 • Grade 8 • Short Link • Mid-link • Long-link



GUNNEBO Industries

Chain

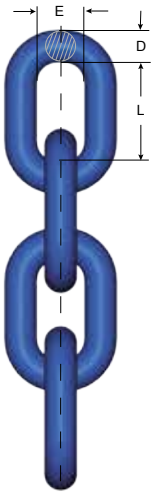
Technical Information

WARNING:
Failure to read, understand and comply with the following instructions, working load limits and specifications in this publication may result in serious injury or damage to property.

Short Link KLA, GrabiQ Grade 10 (200)

Heat treatment
Quenched and tempered.
Note! For chain grade 10 (200) the maximum in-service temperature is 200 °C.

Surface treatment
Painted blue



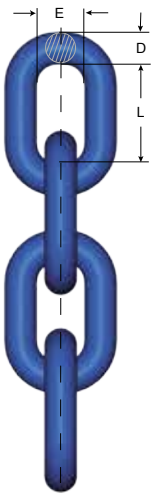
Art. no. Box	Code	WLL tonnes	D nom. mm	L » mm	E » mm	Weight kgs/m	MPF kN	Breaking force kN
Z802300 - 1 x 200 m	KLA 6-10 (200)	1.5	6	18	8	0.8	36.8	58.8
Z802337 - 1 x 200 m	KLA 7-10 (200)	2.0	7	21	10	1.1	48	77
Z802301 - 1 x 200 m	KLA 8-10 (200)	2.5	8	24	11	1.4	63	102
Z802302 - 1 x 100 m	KLA 10-10 (200)	4.0	10	30	14	2.3	98	158
Z802303 - 1 x 100 m	KLA 13-10 (200)	6.7	13	39	18	3.8	166	268
Z802304 - 1 x 100 m	KLA 16-10 (200)	10.0	16	48	22	5.6	251	402
Z802305 - 1 x 50 m	KLA 20-10 (200)	16.0	20	60	29	9.4	393	630
Z802246 - 1 x 50 m	KLA 22-10 (200)	20.0	22	66	31	11.8	491	785
Z802248 - 1 x 50 m	KLA 26-10 (200)	27.0	26	78	37	14.6	664	1062
Z802440 - 1 x 25 m	KLA 32-10 (200)	40.0	32	96	43	24.4	1006	1610

Short Link KLA, GrabiQ Grade 10 (400)

Heat treatment
Quenched and tempered.
Note! For chain grade 10 (400) the maximum in-service temperature is 400 °C.

Surface treatment
Painted blue

Note: This chain is marked with "8+" in addition to the marking required by the machine directive



Art. no. Box	Code	WLL tonnes	D nom. mm	L » mm	E » mm	Weight kgs/m	MPF kN	Breaking force kN
Z802306 - 1 x 200 m	KLA 6-10 (400)	1.5	6.6	18	8.9	1.0	36.8	58.8
Z802307 - 1 x 200 m	KLA 8-10 (400)	2.5	8.8	24	11.2	1.7	63	102
Z802308 - 1 x 100 m	KLA 10-10 (400)	4.0	11.0	30	14.4	2.6	98	158
Z802309 - 1 x 100 m	KLA 13-10 (400)	6.7	14.3	39	19.2	4.5	166	268
Z802310 - 1 x 100 m	KLA 16-10 (400)	10.0	17.3	48	23.0	6.7	251	402

Short link KLB, Classic Grade 8

EN 818-2

Heat treatment
Quenched and tempered

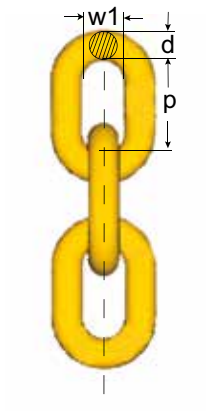
Surface treatment
Painted black (KLB)
Painted yellow (KLU)

Art. no. Box	Code	WLL tonnes*	D nom.	L	E	Weight kgs/m	Manufacturing proof force kN	Breaking force kN
Z802174 - 1 x 200 m	KLB 6-8E	1.1	6	18	8.5	0.8	28.3	45.2
Z802175 - 1 x 200 m	KLB 7-8E	1.5	7	21	10	1.1	38.5	62
Z802176 - 1 x 200 m	KLB 8-8E	2.0	8	24	11	1.4	50.3	80.6
Z802156 - 1 x 100 m	KLB 10-8E	3.2	10	30	14	2.3	79	130
Z802157 - 1 x 100 m	KLB 13-8E	5.4	13	39	18	3.8	133	214
Z802177 - 1 x 100 m	KLB 16-8E	8.2	16	48	22	5.6	201	322
Z801203 - 1 x 100 m	KLB 19-8E	11.6	19	57	26	7.8	284	457
Z801228 - 1 x 50 m	KLB 22-8E	15.5	22	66	30	10.6	380	610
Z801231 - 1 x 50 m	KLB 26-8E	21.6	26	78	35	14.8	531	850
Z801232 - 1 x 25 m	KLB 32-8E	32.8	32	96	43	21.6	804	1300

*Safety factor 4:1

All dimensions in mm

Short Link Chain KLFU, Grade 8



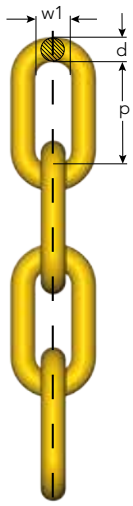
Heat treatment
Quenched and tempered, Stress relieved

Surface treatment
Painted yellow

Not for lifting purposes

Art. no.	Code	Link dimensions			Weight kgs/m	Min. breaking load (tonnes)	Delivery length
		d nom.	P »	w1 »			
Z802330	KLFU-10-8	10	30	14.6	2.2	12.6	1 x 100 m
Z802331	KLFU-13-8	13	39	18.4	3.7	21.4	1 x 100 m
Z801146	KLFU-16-8	16	48	22.6	5.8	32.2	1 x 100 m
Z327377	KLFU-19-8	19	57	26	8.0	45.4	1 x 100 m
Z327385	KLFU-22-8	22	66	30	11.0	61.0	1 x 50 m
Z801505	KLFU-26-8	26	78	35	14.8	86.0	1 x 50 m

Mid-link Chain MLFU, Grade 8



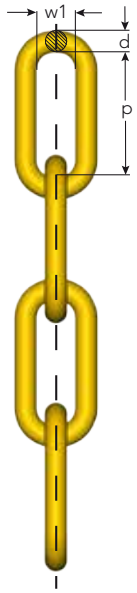
Heat treatment
Quenched and tempered, Stress relieved

Surface treatment
Painted yellow

Not for lifting purposes

Art. no.	Code	Link dimensions			Weight kgs/m	Min. breaking load (tonnes)	Delivery length
		d nom. mm	P » mm	w1 » mm			
Z802332	MLFU-10-8	10	40	14	2.0	12.6	1 x 100 m
Z802333	MLFU-13-8	13	55	20	3.3	21.4	1 x 100 m
Z800564	MLFU-16-8	16	65	22	5.0	32.2	1 x 100 m
Z800476	MLFU-19-8	19	75	29	7.1	45.4	1 x 100 m
Z800661	MLFU-22-8	22	88	30	9.4	61.0	1 x 50 m
Z801770	MFLU-26-8	26	91	35	13.9	86.0	1 x 50 m

Long-link Chain LLU, Grade 8



Heat treatment
Quenched and tempered, Stress relieved

Surface treatment
Painted yellow

Not for lifting purposes

Art. no.	Code	Link dimensions			Weight kgs/m	Min. breaking load (tonnes)	Delivery length
		d	p	w1			
Z801933	LLU-6-8	6	35	10	0.6	4.5	5 x 100 m
Z801934	LLU-9-8	9	53	15	1.4	10.2	4 x 100 m
Z801935	LLU-11-8	11	64	18	2.1	15.4	4 x 100 m
Z801936	LLU-13-8	13	80	22	2.9	21.4	3 x 100 m
Z802160	LLU-16-8	16	100	27	4.6	32.2	1 x 100 m
Z601983	LLU-19-8	19	100	28	6.5	45.4	1 x 100 m
Z700526	LLU-22-8	22	120	36	8.7	61.0	1 x 50 m

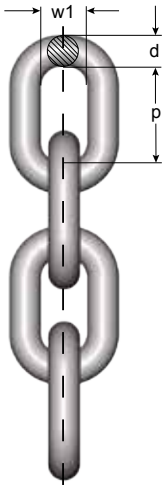
*Safety factor 4:1

All dimensions in mm

Short Link Chain - KLFZ, Grade 7

Heat treatment
Quenched and tempered
Not for lifting purposes

Surface treatment
Hot Dip Galvanized (HDG)



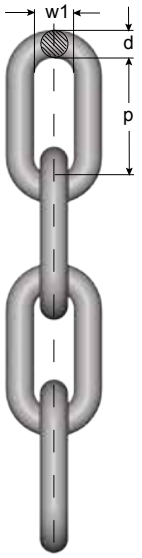
Art. No	Code	Link dimensions			Min. breaking load (tonnes)	Weight kgs/m	Delivery length
		d nom.	P »m	w1 »			
Z800666	KLFZ-10-7	10	30	14.6	11	2.2	1 x 100 m
Z802329	KLFZ-13-7	13	39	18.4	18	3.7	1 x 100 m
Z801644	KLFZ-16-7	16	48	22.6	28	5.8	1 x 100 m
Z801409	KLFZ-17-7	17	48	24.0	30	6.4	1 x 100 m
Z801407	KLFZ-19-7	19	57	26.0	40	8.0	1 x 100 m

Mid-link Chain MLFZ, Grade 7

Heat treatment
Quenched and tempered

Not for lifting purposes

Surface treatment
Hot Dip Galvanized (HDG)



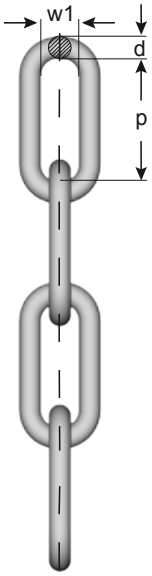
Art. No	Code	Link dimensions			Min. breaking load (tonnes)	Weight kgs/m	Delivery length
		d nom.	P »	w1 »			
Z801561	MLFZ-10-7	10	40	14	11	2.0	1 x 100 m
Z802335	MLFZ-13-7	13	55	20	18	3.3	1 x 100 m
Z801645	MLFZ-16-7	16	65	22	28	5.0	1 x 100 m
Z801477	MLFZ-19-7	19	75	29	40	7.1	1 x 100 m

Long Link Chain LLZ, Grade 6/7

Heat treatment
Quenched and tempered

Not for lifting purposes

Surface treatment
Hot Dip Galvanized (HDG)



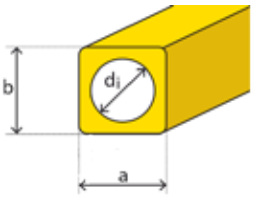
Art. No	Code	Link dimensions			Min. breaking load (tonnes)	Weight kgs/m	Delivery length
		d nom.	p »	w1 »			
Z487081	LLZ-6-7	6	35	10	3.9	0.6	1 x 100 m
Z801553	LLZ-9-7	9	53	15	9.0	1.4	1 x 100 m
Z360314	LLZ-11-7	11	64	18	13.0	2.1	4 x 100 m
Z800676	LLZ-13-6	13	80	22	18.0	2.9	3 x 100 m
Z802207	LLZ-13-6	13	80	22	18.0	2.9	1 x 229,5 m
Z801567	LLZ-16-6	16	100	27	24.0	4.6	1 x 100 m
GS1073	LLZ-16-6	16	100	27	24.0	4.6	1 x 200 m
Z801458	LLZ-19-6	19	100	28	34.0	6.5	1 x 120 m
Z801887	LLZ-22-6	22	120	36	46.0	8.7	1 x 50 m

*Safety factor 4:1

All dimensions in mm

Polyurethane Protective Sleeves - Stobitex

A heavy wear protection for demanding situations, made of transparent polyurethane.
Length 2000 mm can be supplied upon request.



Art. no.	Inside measurement diameter mm	Outside measurement mm	Length mm	For chain dim. mm
G005990577	26	36 x 36	1000	6
G005990579	32	42 x 42	1000	8
G005990581	42	52 x 52	1000	10
G005990583	50	60 x 60	1000	13
G005990585	63	73 x 73	1000	16

Chain Manufacturing - Quality and Strength Requirements

Chains are divided into grades based on minimum nominal breaking stress

Chain Grade	Surface treatment	Code	Minimum breaking stress N/mm²	Load factors			Typical use
				WLL	MPF	Breaking force	
8	Yellow U Black B	KL	800	1	2.5	4	General lifting (KL), Container lashing (LL). Extra heavy towing (ML), Lashing (KL, LL). Fishing (KL, ML, LL)
		ML	800	-	1	4	
		LL	800	-	1	4	
10	Blue A	KL	1000	1	2.5	4	General lifting

Testing and Quality Control- GrabiQ & Classic Chain (Grade 10 & 8)

In each step of the manufacturing of the chain, our systematic quality monitoring will ensure the highest safety and the longest life span in the product. Here are some especially important aspects of quality:

Material

The incoming material is supplied with test certificates only from qualified manufacturers and according to our stated material specifications.

Manufacturing

During forming and welding, the operators continuously control that the links meet the specified dimensions both before and after welding.

Single link samples are continuously mandrel tested on the weld. Shape, dimensions and deburring are then inspected visually.

Sample lengths are heat treated and then destruction load tested. Following these tests, the chain is heat treated.

Hardening and tempering is carried out continuously in computer controlled induction furnaces with regular samplings.

Proof Force

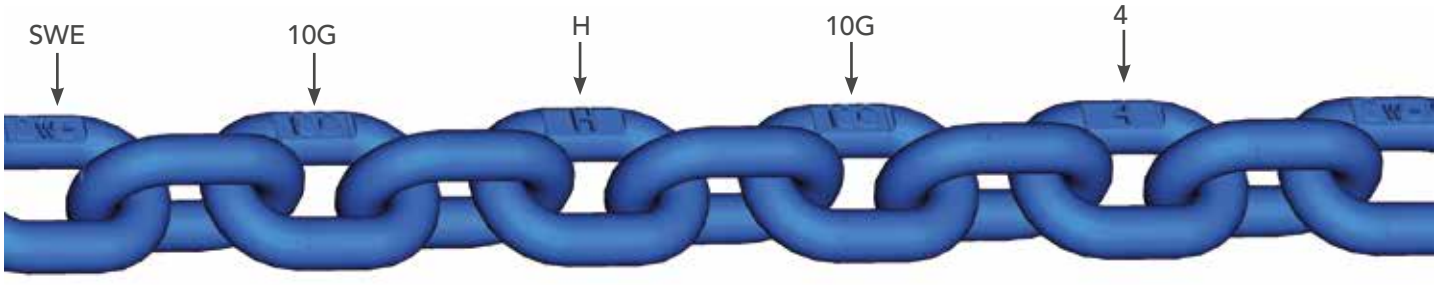
The entire chain is test loaded. The manufacturing proof force for short link chain is 2.5 times the permitted working load limit. This gives the chain high safety in use. The chain is then visually inspected and cut into delivery lengths. A sample is taken from every length and tested to destruction. Dimensions and shape are also checked. All results are documented.

Marking and traceability

The international standards for lifting chain require that the chain is marked with Grade and Manufacturers ID. On our chain we stamp “SWE - 10G - H - 10G - 4”, where the “H” and the “4” is the combination for the traceability code. In case of the unlikely event of chain failure, we can trace the specific chain link back to the very batch and raw material as well as the year and place of manufacture. Each individual delivery also has its unique batch number.

Marking and traceability

The international standards for lifting chain require that the chain is marked with Grade and Manufacturers ID. On our chain we stamp "SWE - 10G - H - 10G - 4", where the "H" and the "4" is the combination for the traceability code. In case of the unlikely event of chain failure, we can trace the specific chain link back to the very batch and raw material as well as the year and place of manufacture. Each individual delivery also has its unique batch number.



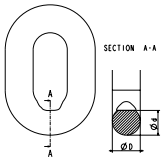
Use

- Never lift with a twisted chain.
- Use shortening hooks, knotting is not allowed.
- Use edge protectors to prevent sharp edges from damaging the chain.

Maintenance

Periodic thorough examination must be carried out at least every 12 months or more frequently according to local statutory regulations, type of use and past experience.

1. Overloaded chain slings must be taken out of service.
2. Chain and components including load pins which have been damaged, deformed, elongated, bent or showing signs of cracks or gouges shall be replaced. Carefully grind away small nicks and burrs
3. Additional testing by magnetic particle inspection and/or proof loading at max. 2 x WLL may be carried out. The wear of the chain and component shall in no place exceed 10% of the original dimensions.
4. The chain link wear - max. 10% - is defined as the reduction of the mean diameter measured in two directions.



$$\frac{D+d}{2} > 0{,}9d_n$$

Severe Environment

Chain and components must not be used in alkaline (>pH10) or acidic conditions (<pH6). Comprehensive and regular examination must be carried out when used in severe or corrosive inducing environments. In uncertain situations consult your Gunnebo dealer.

Extreme Temperature Conditions

The in service temperature effects the WLL as following :

Temperature (°C)	Reduction of WLL			
	Grade 10 chain (400)	Grade 10 chain (200)	Grade 10 components	Grade 8 chain & components
-40 to +200 °C	0 %	0 %	0 %	0 %
+200 to +300 °C	10 %	Not allowed	10 %	10 %
+300 to +400 °C	25 %	Not allowed	25 %	25 %

After short heat exposure, maximum one hour, the sling reverts to its fully capacity. Upon return to normal temperature, the sling reverts to its full capacity within the above temperature range. Chain slings should not be used above or below these temperatures.
For chain grade 10 the maximum in service temperature is 200° C.

Definitions

Proof force:
Each individual chain link is tested to the Manufacturing Proof Force (MPF) level before delivery. The MPF level is 2.5 times the WLL, equal to 62.5% of the Minimum Breaking Force.

Breaking force (BF):
The highest static force a chain is exposed to during test loading before breaking.

Working load limit (WLL):
The maximum permitted load on a lifting chain under normal (vertical) lifting conditions.

Total ultimate elongation:
The elongation of the test item, relative to the original length, at the moment of breaking.

Johnson Products

Crane Blocks • Snatch Blocks • Oilfield Blocks • Swivels •
Custom Engineered Products

GUNNEBO
Industries

Johnson Products

For the full range of Johnson products, see the Johnson Product Catalog.
Contact your local sales rep for a copy, or see our web: gunneboindustries.com

WARNING:
Failure to read, understand and comply with the following instructions, working load limits and specifications in this publication may result in serious injury or damage to property.

Snatch Blocks

Johnson Snatch Blocks have the convenient side opening feature. This is true even of our heavy duty top dead-end models, and makes it easy to reeve the block without removing any fitting from the end of the wire rope. Other features include choice of swivel hook, shackle, eye fittings or Tailboard Blocks which have no fittings at all.

Standard Features

- Rugged and reliable
- 4:1 design factor
- Easy-open side plates
- Metric rated
- Large hand nuts
- Retainer on latch pin
- Anchor shackle with retainer pin
- Bronze bushing

Optional Features

- Proof load
- Roller bearings
- Marine epoxy paint
- Heavy duty J-latch
- Larger sizes

Wide Range

Now over 250 models and sizes, from 2 to 30 tonnes. Sheave sizes from 80 to 600 mm in diameter. Multiple rope sizes and end fittings available.

Rugged

Johnson's famous durability is well established in the industry. These blocks stand up to the toughest applications, whether in blistering sun or under icy blizzard conditions.

Reliable

From built-in strength comes the reliability long associated with the Johnson name. These blocks are performers, day after day and year after year. American quality you can count on.

Many Choices

Singles, doubles, top dead end, towing, oilfield, pipe laying and general construction. Sizes and specific models for all.

Convenient

Large, easy to grip hand nuts on all models, especially on the smallest models. Makes it easier to open and close under all conditions without removing gloves, and easy to tap with a hammer to loosen or lock down.

Secondary Securement

All hand nuts and shackles are fitted with "R" pins as a secondary securement device, for example where inspection is limited or infrequent due to location or other factors.

Art.no.	Model	WLL tonnes	Sheave diameter	Description	Weight kgs
474602012QR3	SB2S3BS	2	3" / 80 mm	Suits 8 - 10 mm wire rope	2.3
474603016QR3	SB4S4BS	4	4" / 100 mm	Suits 10 - 13 mm wire rope	7.3
474620016QR3	SB4S6BS	4	6" / 150 mm	Suits 10 - 13 mm wire rope	9.5
474365024QR3	SB8S6BS	8	6" / 150 mm	Suits 16-20 mm wire rope	13.2
474377024QR3	SB8S10BS	8	10" / 250 mm	Suits 16-20 mm wire rope	19.5
474418028QR3	SB12S8BS	12	8" / 200 mm	Suits 20 - 22 mm wire rope	27.7
474424028QR3	SB12S10BS	12	10" / 250 mm	Suits 20 - 22 mm wire rope	33.6
474455028QR3	SB15S8BS	15	8" / 200 mm	Suits 20 - 22 mm wire rope	28.1
474461028QR3	SB1510BS	15	10" / 250 mm	Suits 20 - 22 mm wire rope	34.0
474731036QR3	SB20S16BS	20	16" / 400 mm	Suits 26 - 30 mm wire rope	43.1
474740040QR3	SB30S20BS	30	20" / 500 mm	Suits 30 - 32 mm wire rope	123.8

Single Sheave Snatch Block with Hook

Art.no.	Model	WLL tonnes	Sheave diameter	Description	Weight kgs
475092012QR3	SB2S3BH	2	3" / 80 mm	Suits 8 - 10 mm wire rope	2.3
474655016QR3	SB4S4BH	4	4" / 100 mm	Suits 10 - 13 mm wire rope	6.8
474601024QR3	SB8S8BH	8	8" / 200 mm	Suits 16-20 mm wire rope	15.9
474577028QR3	SB12S8BH	12	8" / 200 mm	Suits 20 - 22 mm wire rope	25.9
475131036QR3	SB20S10BH	20	10" / 250 mm	Suits 26 - 30 mm wire rope	43.1

Manhandler Snatch Block

Johnson's Manhandler Snatch Blocks (MHSB) are suitable for personnel hoisting when properly incorporated into a compliant personnel hoist system and maintained in good working order.

See the Manhandler Warnings and Use Limitations Brochure available from Gunnebo Industries and your distributor.

- Standard painted finish
- For lifting personnel
- Sealed roller bearings
- Interlocking internal design
- R-pins retainers
- Secondary tether attachment points

Art. no	Model	WLL kgs	Wire rope mm	Sheave diameter mm	Weight kgs
687431014	MHSB1S8RS	680	10 - 11	200	22

6

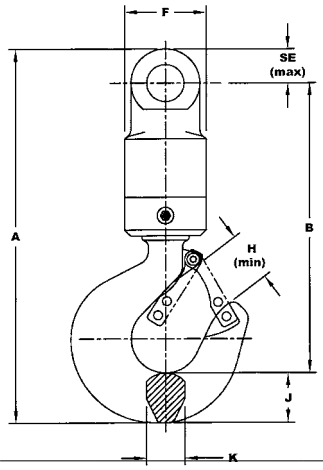
Galvanized Derrick Block

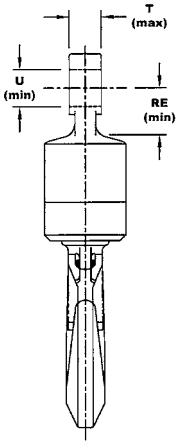
- 4 - 12 tonnes WLL
- Standard galvanized finish
- Handling slots in the body
- Large knock-off handles
- Interlocking internal design
- For lifting materials
- R-Pin retainers

Art. no	Model	WLL tonnes	Wire rope mm	Sheave diameter mm	Weight kgs
687710016	MHSB4S8TS	4	10 - 13	200	15
687334018	MHSB12S10TS	12	13 - 14	250	37.6

Eye/Hook, 3 - 30 tonnes

4 to 1 design factor, CE marked





Key to Eye/Hook Swivel Model Numbers:

3 - Working Load Limit (tonnes)
E - Top Fitting (E = Eye)
H - Bottom Fitting (H = Hook)
M - Midget Swivel

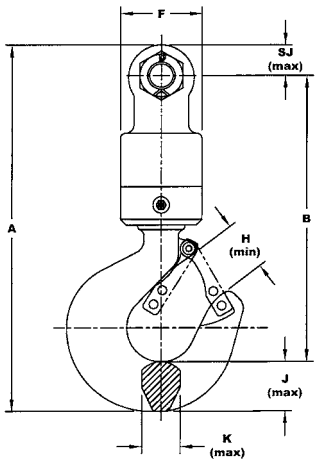
To order please specify the model number

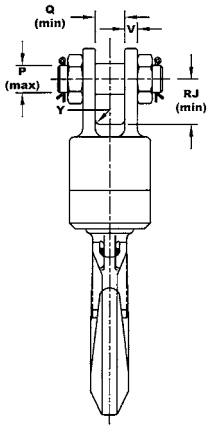
CE

Model No.	WLL tonnes	A Overall Length	B Net Length	F Swivel Dia.	H Throat Opening with Latch	J Hook Thickness	K Hook Width	RE Hole to Obstruction Min	SE Hole to End of Fitting Max	T Thickness of Eye Max	U Hole Dia. Min	Weight kgs
3EHM	3.0	268.7	200.9	66.8	28.4	37.6	28.4	31.6	31.0	23.1	26.2	3.5
3EH	3.0	341.9	272.5	82.5	28.4	37.6	28.4	39.4	34.0	26.2	33.3	6.8
5EH	5.0	350.3	280.9	82.5	28.4	37.6	28.4	39.4	34.0	26.2	33.3	6.8
7EH	7.0	376.4	298.7	82.5	35.3	46.0	35.0	39.4	34.0	26.2	33.3	7.3
9EH	9.0	472.9	357.6	101.6	53.3	64.3	49.0	56.9	51.6	32.5	45.2	15.4
12EH	12.0	484.4	367.8	112.8	53.3	64.3	49.0	60.5	51.6	32.5	45.2	17.7
15EH	15.0	484.4	367.8	112.8	53.3	64.3	49.0	60.5	51.6	32.5	45.2	17.7
20EH	20.0	579.9	443.2	133.3	71.1	76.2	60.4	71.4	61.2	42.2	53.3	31.3
25EH	25.0	629.4	480.1	133.3	83.3	88.9	76.2	70.9	62.0	42.9	53.3	40.8
30EH	30.0	673.9	515.1	165.1	83.3	88.9	76.2	66.0	73.2	41.4	58.7	53.1

Jaw/Hook, 3 - 15 tonnes

4 to 1 design factor, CE marked





Key to Jaw/Hook Swivel Model Numbers:

3 - Working Load Limit (tonnes)
J - Top Fitting (J = Jaw)
H - Bottom Fitting (H = Hook)
M - Midget Swivel

To order please specify the model number

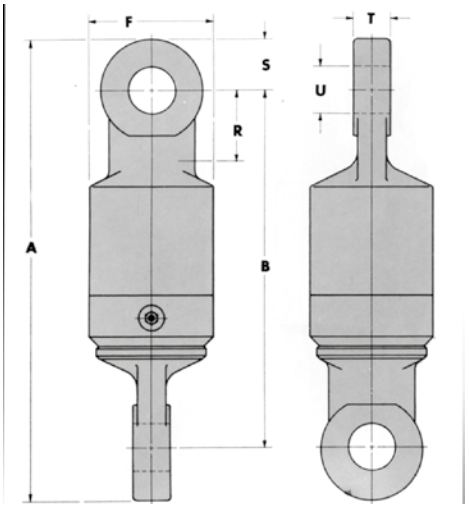
CE

Model No.	WLL tonnes	A Overall Length	B Net Length	F Swivel Dia.	H Throat Opening with Latch	J Hook Thickness	K Hook Width	P Pin Dia. Max	Q Width Between Ears Min	RJ Pin to Obstruction Min	SJ Pin to End of Fitting Max	V Thickness of Ear	Y Jaw Radius	Weight kgs
3JHM	3.0	267.2	200.9	66.8	28.4	37.6	28.4	25.4	24.6	35.1	31.0	12.7	2.3	4.1
3JH	3.0	348.2	275.6	82.5	28.4	37.6	28.4	31.7	36.6	52.6	36.6	14.2	6.4	8.2
5JH	5.0	356.6	284.0	82.5	28.4	37.6	28.4	31.7	36.6	52.6	36.6	14.2	6.4	8.6
7JH	7.0	382.8	302.0	82.5	35.3	46.0	35.0	31.7	36.6	52.6	36.6	14.2	6.4	9.0
9JH	9.0	472.9	357.9	101.6	53.5	64.2	49.0	44.4	42.9	68.3	52.3	19.0	6.4	17.9
12JH	12.0	490.7	374.9	112.8	53.5	64.2	49.0	44.4	49.3	74.7	52.3	19.0	6.4	20.4
15JH	15.0	490.7	374.9	112.8	53.5	64.2	49.0	44.4	49.3	74.7	52.3	19.0	6.4	20.4

All measurements in mm unless other is stated

Eye/Eye, 3 - 30 tonnes

5 to 1 design factor, CE marked



Key to Eye/Eye Swivel Model Numbers:

3 - Working Load Limit (tonnes)
E - Top Fitting (E = Eye)
E - Bottom Fitting (E = Eye)
M - Midget Swivel

To order please specify the model number

CE

Model No.	WLL tonnes	A Overall Length	B Net Length	F Swivel Dia.	R Hole to Obstruction Min	S Hole to End of Fitting Max	T Thickness of Eye Max	U Hole Dia. Min	Weight kgs
3EEM	3.0	204.0	143.5	66.8	31.2	31.8	23.6	26.2	2.7
4EE	4.0	302.3	237.2	82.5	39.4	34.0	26.2	33.3	6.3
7EE	7.0	302.3	237.2	82.5	39.4	34.0	26.2	33.3	6.3
12EE	12.0	388.4	286.8	101.6	57.0	51.6	32.5	45.2	11.8
19EE	19.0	403.9	302.3	112.8	60.5	51.6	32.5	45.2	14.1
25EE	25.0	449.6	328.9	133.3	70.9	62.0	42.9	53.3	22.7
30EE	30.0	510.3	370.6	165.1	66.0	73.2	41.4	58.7	38.5

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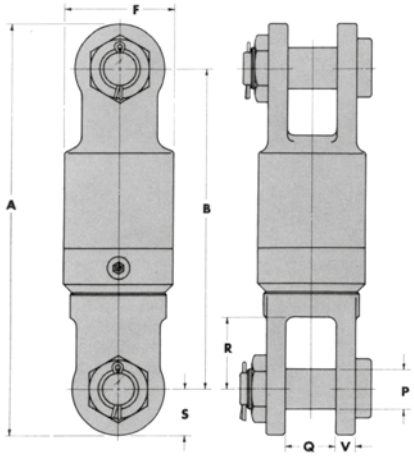
Jaw/Jaw, 3 - 19 tonnes

5 to 1 design factor, CE marked



Key to Jaw/Jaw Swivel Model Numbers:

3 - Working Load Limit (tonnes)
J - Top Fitting (J = Jaw)
J - Bottom Fitting (J = Jaw)
M - Midget Swivel

To order please specify the model number

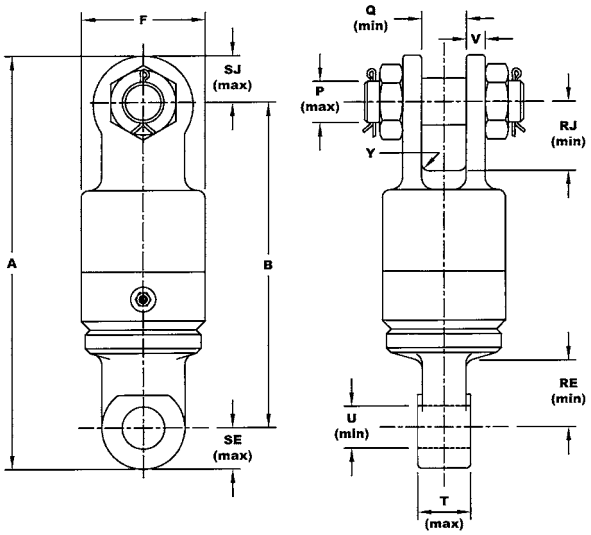
CE

Model No.	WLL tonnes	A Overall Length	B Net Length	F Swivel Dia.	P Pin Dia. Max	Q Width Between Ears Min	R Pin to Obstruction Min	S Pin to End of Fitting Max	V Thickness of Ear	Y Jaw Radius	Weight kgs
3JJM	3.00	208.5	149.6	66.8	25.4	24.6	33.5	31.8	12.7	2.3	3.8
4JJ	4.00	317.0	246.6	82.5	31.7	36.6	52.6	36.6	14.2	6.3	9.9
7JJ	7.00	317.0	246.6	82.5	31.7	36.6	52.6	36.6	14.2	6.3	9.9
12JJ	12.00	396.5	294.9	101.6	44.4	42.9	68.3	52.3	19.0	6.3	19.1
19JJ	19.00	422.6	321.0	112.8	44.4	49.3	74.7	52.3	19.0	6.3	21.5

All measurements in mm unless other is stated

Jaw/Eye, 3 - 19 tonnes

5 to 1 design factor, CE marked



Key to Jaw/Eye Swivel Model Numbers:

- 3 - Working Load Limit (tonnes)
- J - Top Fitting (J = Jaw)
- E - Bottom Fitting (E = Eye)
- M - Midget Swivel

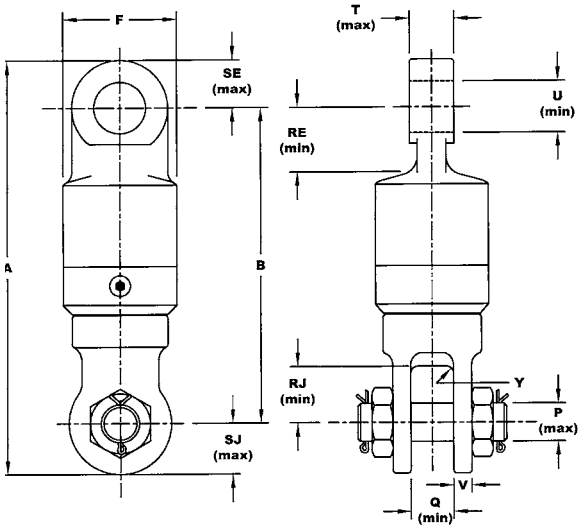
To order please specify the model number

CE

Model No.	WLL tonnes	A Overall Length	B Net Length	F Swivel Dia.	P Pin Dia. Max.	Q Width Between Ears Min.	RE Hole to Obstruction Min.	RJ Pin to Obstruction Min.	SE Hole to End of Fitting Max.	SJ Pin to End of Fitting Max.	T Thickness of Eye Max.	U Hole Dia. of Fitting Min	V Thick-ness of Ear	Y Jaw Radius	Weight kgs
3JEM	3.0	202.2	143.5	66.8	25.4	23.9	31.0	33.5	31.8	31.8	23.6	26.2	12.7	2.3	3.2
4JE	4.0	311.9	242.8	82.5	31.8	36.6	39.4	52.6	34.0	36.6	23.8	33.3	14.2	6.4	7.8
7JE	7.0	311.9	242.8	82.5	31.8	36.6	39.4	52.6	34.0	36.6	23.8	33.3	14.2	6.4	7.8
12JE	12.0	390.1	288.5	101.6	44.5	43.7	61.7	69.1	51.6	51.6	32.5	45.2	19.1	6.4	14.6
19JE	19.0	403.9	302.3	112.8	44.5	50.0	61.7	75.4	51.6	51.6	32.5	45.2	19.1	6.4	16.9

Eye/Jaw, 3 - 19 tonnes

5 to 1 design factor, CE marked



Key to Eye/Jaw Swivel Model Numbers:

- 3 - Working Load Limit (tonnes)
- E - Top Fitting (E = Eye)
- J - Bottom Fitting (J = Jaw)
- M - Midget Swivel

To order please specify the model number

CE

Model No.	WLL tonnes	A Overall Length	B Net Length	F Swivel Dia.	P Pin Dia. Max	Q Width Between Ears Min	RE Hole to Obstruction Min	RJ Pin to Obstruction Min	SE Hole to End of Fitting Max	SJ Pin to End of Fitting Max	T Thickness of Eye Max	U Hole Dia. Min	V Thick-ness of Ear	Y Jaw Radius	Weight kgs
3EJM	3.0	210.0	149.9	66.8	25.4	24.6	31.8	34.3	31.0	31.0	23.1	26.2	12.7	2.3	3.3
4EJ	4.0	310.6	243.6	82.5	31.7	36.6	41.4	52.6	32.5	36.6	26.2	33.3	14.2	6.3	8.3
7EJ	7.0	310.6	243.6	82.5	31.7	36.6	41.4	52.6	32.5	36.6	26.2	33.3	14.2	6.3	8.3
12EJ	12.0	396.5	294.9	101.6	44.4	42.9	64.3	68.3	51.6	52.3	32.5	45.2	19.0	6.3	16.1
19EJ	19.0	416.3	314.7	112.8	44.4	49.2	62.0	74.7	51.6	52.3	32.5	45.2	19.0	6.3	18.9

All measurements in mm unless other is stated

Oilfield Blocks

We have produced Johnson oilfield equipment for over five decades. Because of our expertise in sheaves and blocks, Gunnebo Industries has become a respected manufacturer for the Petroleum industry. We know the needs and we have the know-how to fulfil them with quality lifting devices. High capacity, custom engineered oilfield blocks available upon request.


Tong Line Block


Laydown Block


Hayfork Pulley


Guy Line Block

Open Wedge Sockets

Open Wedge Sockets combine positive attachment with optimum versatility. Easy-to-change Johnson Wedge Sockets are a high strength cast alloy steel with Charpy value of 34 Joules at -20 °C. Each socket accepts at least two different ductile iron wedges. This allows the socket to be used with more than one rope size. Together, wedge and body act as a vise which grips the wire rope and locks it into place. The headed attachment pin is standard and has a Charpy value of 34 Joules at -20 °C.

Overhaul Balls

Provide the overhaul weight necessary to counter bearing friction and winch-to-boom-tip line weight. Because these units must meet a wide range of field applications, we offer an equally wide range of unit sizes. It is in fact, one of the widest ranges available. Over 240 models; 3 - 30 tonnes WLL. Non-swivel balls are also available.

Standard Features

- 3 to 30 tonnes
- 4:1 design factor
- Heavy duty J-Latch standard

Optional Features

- High capacity, custom engineered balls available upon request.


Split Ball


Non-Swivel


Top Swivel


Bottom Swivel


Gunnebo Industries BK Safety Hook

Wire Rope Sheaves

Johnson Sheaves are a highly trusted and popular product, both in its own right as well as the original equipment most preferred by major O.E.M. accounts. Johnson Sheaves fall into two major categories:

- First is our wide range of conventional cast steel and ductile iron sheaves which range in size from 3 to 14 inches in O.D.
- Second is the revolutionary ForgeFab® – a superior strength line of wire rope sheaves which can be supplied without long delays. The ForgeFab® sheaves will add value through increased product life, for the sheave as well as the wire rope, and gives the user the advantage of flexibility in field.

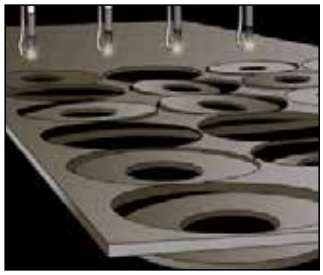
Standard features

- 80 - 2740 mm sheave diameters
- 6 - 80 mm wire rope sizes
- 4:1 design factor
- Cast iron, ductile iron, cast steel, ForgeFab® steel types.

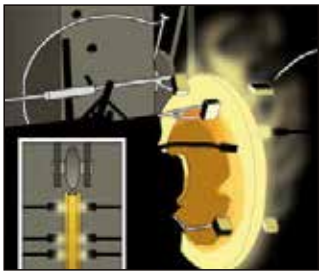
Optional features

- Custom designs to customer shaft, bearing mounting, hub, sheave O.D. or wire rope size requirement.
- Electroplate inorganic zinc compound and other corrosion resistant coatings available.
- Hub-located grease fittings
- Modifications as required to API and other applicable industry standards.
- Special shaft, furnished for any sheave listed.
- AISE No. 6 specifications.
- Cold weather properties.

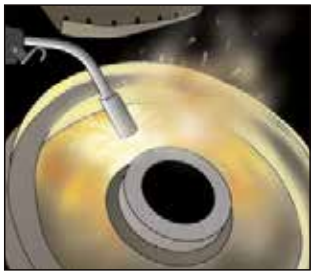
What Makes ForgeFab® Superior?



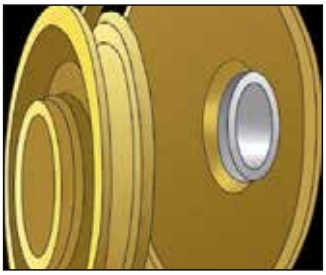
Each ForgeFab® sheave begins as driven, precision disc cut from proprietary chemistry alloy steel plate.



The steel disc is heated to forging temperature and its edge rotated against a system of staged rollers to forge the sheave rim and wire rope groove.



A precisely machined hub is arc welded to the forged disc. A variety of welding techniques is used, including: fillet, submerged arc, partial penetration and full penetration, depending on the application.

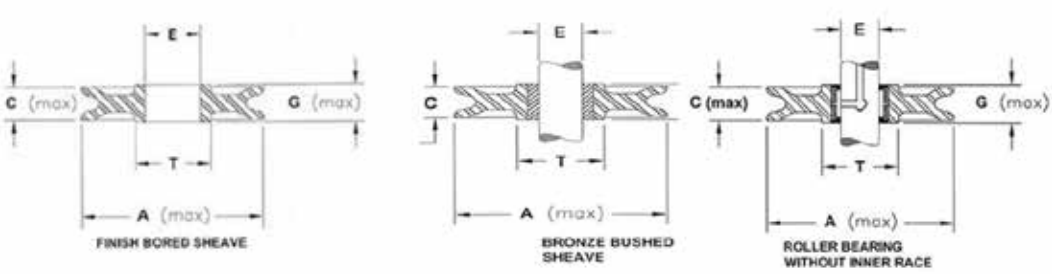


The result: A precision built ForgeFab® sheave, resistant to wear giving a long product life span as well as decreased wear on the wire rope.

Quotation of Sheaves

To be able to quote Johnson Sheaves we need as much as possible of the following information provided:

- Application
- Quantity
- Sheave outside diameter (A)
- Tread diameter or Pitch diameter
- Wire rope diameter
- Is Flamed Hardened Groove required (standard feature on16"and up)?
- Rim width (C)
- Hub width (G)
- Hub Outside Diameter (T)
- Bore size if plain or finished bore (E) or shaft size with bronze bush or bearing (E)
- Bearing type (if required); e.g. Bronze bushed or other type of bearing
- Is there any weight restrictions?
- Is grease fitting in hub is needed?
- Is there any paint or finish requirements?
- Line Load, Line Speed and Degree of Wrap



Quick Reeve - Mobile Crane Block

Standard Features

- Quick release, zinc plated, rope retention pin meets OSHA requirements for rope retention. Can not be completely removed from block to avoid pin loss.
- Johnson J-Latch™ heavy duty, steel, lockable, spring loaded latch meets OSHA personnel lifting requirements.
- The Johnson J-Latch™ provides a fast hook deformation inspection point.
- Available tonnage capacities from 5 - 300 tonnes. Larger capacities available upon request.
- Quick Reeve™ upright design rests on its own hook for a stable base while reeving.
- No bulky, drop down, trap door to handle or damage.
- Wire rope end fitting will pass through block without removal from wire rope.

Fixed Bail Construction and Marine Rigging Blocks

Beginning with 100 standard models, you are assured of selections that fit your every need. The lowest weight to capacity ratios, the quickest rigging and the easiest maintenance are a few additional benefits that prove once again that Johnson Blocks are consistent in quality and value.

Standard Features

- 10 to 135 tonnes capacity
- 4:1 design factor
- 1 to 6 sheaves
- Full coverage side plates and centre plates
- Top dead-end shackle
- Tapered roller bearings
- Oval pattern side plates

Optional Features

- Bronze bushings
- Diamond pattern side plates
- Fully galvanized for corrosion resistance
- High capacity, custom engineered blocks available upon request

Shorty "J" Crane Blocks

Shorty "J" represents the broadest line of standard crane blocks in the industry. In all, we manufactures more than 1500 standard models of crane blocks not including options.

Standard Features

- 5 - 450 tonnes capacity
- 4:1 design factor
- 1 - 8 sheaves
- 250 - 760 mm sheave diameters
- Reeving guides for all models
- Bronze bushed and roller bearing sheaves
- Direct-channel sheave bearing lubrication through centre pin
- Flame hardened grooves on sheave sizes 400 - 760 mm diameters
- Dual action (swing/swivel) roller thrust bearing hooks
- Forged steel hooks, 3 - 30 tonnes
- Total disassembly capacity

Optional Features

- Forged steel hooks, 35 - 300 tonnes
- Cast alloy steel duplex hooks with bar latch 25 - 1750 tonnes
- Forged steel duplex hooks
- Anti-rotation locking devices, all models
- Swivel safety anchor shackles, all models
- Sheave shrouds, all models
- All models have detachable cast iron and steel cheek weights.
- Proof test and certification, radiographic, magnetic particle, and other non-destructive testing to specification by customer

Polyester Lifting

Roundsling • Webbing sling • Protective Sleeves

GUNNEBO Industries

Polyester Lifting

Technical Information

WARNING:
Failure to read, understand and comply with following instructions, working load limits and specifications in this publication may result in serious injury or damage to property.

Roundsling, Single Cover

EN 1492-2

Max WLL: 1–12 tonnes.

Roundsling with seamless single cover and protected label, made of 100% high tensile polyester, close-woven sealed material for high wear resistance.

CE-marked

Safety factor 7:1

Roundsling for safe lifting - marked with Gunnebo Lifting manufacturer ID.

Eff. length	WLL 1 tonnes		WLL 2 tonnes		WLL 3 tonnes		WLL 4 tonnes		WLL 5 tonnes	
	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs
0.5	M57P101	0.2	M57P201	0.3	M57P301	0.4				
1	M57P102	0.4	M57P202	0,5	M57P302	0.6	M57P402	0.8	M57P502	1.0
1,5	M57P103	0.5	M57P203	0.7	M57P303	1.1	M57P403	1.2	M57P503	1.4
2	M57P104	0.7	M57P204	1.1	M57P304	1.3	M57P404	1.6	M57P504	1.9
2.5	M57P105	0.7	M57P205	1.7	M57P305	1.4	M57P405	2.0	M57P505	2.3
3	M57P106	1.0	M57P206	1.5	M57P306	1.8	M57P406	2,.3	M57P506	2.7
4	M57P108	1.4	M57P208	2.0	M57P308	2.6	M57P408	3.1	M57P508	3.6
5	M57P110	1.9	M57P210	2.5	M57P310	3.2	M57P410	3.9	M57P510	4.4
6	M57P112	2.4	M57P212	2.8	M57P312	3.9	M57P412	4.7	M57P512	5.3

Eff. length	WLL 6 tonnes		WLL 8 tonnes		WLL 10 tonnes		WLL 12 tonnes	
	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs
2	M57P604	2.3	M57P804	3.1	M571004	3.9	M571204	4.9
2.5	M57P605	3.4	M57P805	3.8	M571005	4.8	-	
3	M57P606	3.4	M57P806	4.5	M571006	5.8	-	
4	M57P608	4.6	M57P808	6.0	M571008	7.7	M571208	9.6
5	M57P610	5.7	M57P810	7.5	M571010	9.6	M571210	12
6	M57P612	6.8	M57P812	9.0	M571012	11.4	M571212	14.2
7	-	-	-	-	M571014	13.2	-	
8	-	-	-	-	M571016	15.1	M571216	18.8

Other sizes can be produced upon request.

Roundsling, Double Cover

EN 1492-2

WLL: 15–30 tonnes

Roundsling with side seam, double cover, made of 100% high-tensile polyester, close-woven sealed material for high wear resistance

CE-marked

Safety factor 7:1

Roundsling for safe lifting marked with Gunnebo Lifting manufacturer ID

Eff. length	WLL 15 tonnes		WLL 20 tonnes		WLL 25 tonnes		WLL 30 tonnes	
	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs
2	M471504	6.8	-			-	-	
2.5	M471505	8.5	-			-	-	
3	M471506	10.2	M472006	15		-	-	
4	M471508	13.5	M472008	20	M472508	25.2	M473008	32
5	M471510	16.9	M472010	24.9	M472510	31.5	M473010	38.7
6	M471512	20.2	M472012	29.8	M472512	37.7	M473012	46.4

Webbing Sling Duplex with sleeved eyes EN 1492-1

WLL: 1 – 15 tonnes.

Flat webbing slings with eyes, made of 100% high-tensile polyester, close woven sealed material for high wear resistance.

According to standard specifications.

Webbing sling for safe lifting - marked with Gunnebo Industries manufacturer ID.

Eff. length m	WLL 1 tonnes Web. width 30 mm		WLL 2 tonnes Web. width 60 mm		WLL 3 tonnes Web. width 90 mm	
	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs
1	M37P101	0.3	M37P201	0.6	-	
2	M37P102	0.5	M37P202	1.0	M37P302	1.4
3	M37P103	0.7	M37P203	1.3	M37P303	2.0
4	M37P104	0.9	M37P204	1.7	M37P304	2.5
5	M37P105	1.0	M37P205	2.0	M37P305	3.1
6	M37P106	1.3	M37P206	2.4	M37P306	3.6
8	M37P108	1.4	M37P208	2.8	M37P308	4.6
10	M37P110	1.8	M37P210	3.7	M37P310	5.7
12	M37P112	2.1	M37P212	4.8	M37P312	6.1

Eff. length m	WLL 4 tonnes Web. width 120 mm		WLL 5 tonnes Web. width 150 mm		WLL 6 tonnes Web. width 180 mm		WLL 8 tonnes Web. width 240 mm	
	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs
6	M37P406	5.1	M033506	6.7	M033606	6.7	M033806	9.1
8	M37P408	6.7	M033508	8.9	M033608	8.8	M033808	11.7
10	M37P410	8.4	M033510	11.0	M033610	10.8	M033810	14.5
12	M37P412	9.7	M033512	13.1	M033612	12.9	M033812	17.3

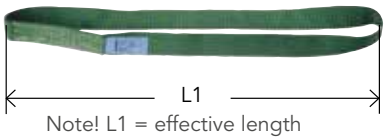
Other sizes can be produced upon request

Webbing sling - Endless

EN 1492-1

WLL: 1–4 Tonnes.
Flat webbing endless sling made of 100% high-tensile polyester, close-woven sealed material for high wear resistance.
CE-marked.
Webbing sling for safe lifting - marked with Gunnebo Industries manufacturer ID.

Eff. length	WLL 1 tonnes Webb. width 30 mm		WLL 2 tonnes Webb. width 60 mm		WLL 3 tones Webb. width 90 mm	
	Art. no.	Weight kgs	Art. no.	Weight kgs	Art. no.	Weight kgs
1	M30P102	0.2	M30P202	0.4	M030030	0.7
1.5	M30P103	0.3	M30P203	0.6	M30P303	0.9
2	M30P104	0.4	M30P204	0.8	M30P304	1.2
2.5	M30P105	0.5	M30P205	1.0	M30P305	1.5
3	M30P106	0.6	M30P206	1.2	M30P306	1.7
4	M30P108	0.7	M30P208	1.5	M30P308	2.3
5	-	0.9	M30P210	1.9	M30P310	2.2
6	M030009	1.1	M30P212	2.3	M30P312	3.4



Note! L1 = effective length

Other sizes can be produced upon request.

Polyurethane Protective Sleeves - Stobitex

Protective sleeves for roundslings and flat webbing slings, made of polyurethane on three sides, the fourth side is made of white polyester. Other sizes can be supplied upon request.

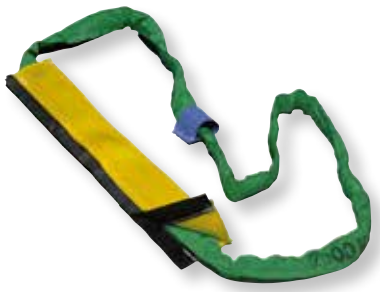
Art. no.	Inside measurement width x depth	For webbing width	Length	Suits
G005990559	35 x 12 mm	30 mm	1000 mm	Web. sling 1 tonnes
G005990560	35 x 12 mm	30 mm	2000 mm	Web. sling 1 tonnes
G005990561	70 x 12 mm	60 mm	1000 mm	Web. sling 2 tonnes
G005990562	70 x 12 mm	60 mm	2000 mm	Roundsling 1 tonnes
G005990563	100 x 12 mm	90 mm	1000 mm	Web. sling. 3 tonnes
G005990564	100 x 12 mm	90 mm	2000 mm	Roundsling 4 tonnes
G005990565	135 x 12 mm	120 mm	1000 mm	Web. sling 3 tonnes
G005990566	135 x 12 mm	120 mm	2000 mm	Roundsling 5 tonnes
G005990567	160 x 12 mm	150 mm	1000 mm	Web. sling 4 tonnes
G005990568	160 x 12 mm	150 mm	2000 mm	Roundsling 5/6/8 tonnes

Protective Sleeve for Roundslings

Protective sleeve made of polyester for fitting on roundslings. Velcro for easy attachment, no sewing necessary.

Art. no.	Roundsling (t)	Length
M040124	1 - 3	500
M040125	4 - 8	500
M040126	1 - 3	1000
M040127	4 - 8	1000

Other sizes can be supplied upon request.



Recommended Contact Surface for Polyester Roundsling 7:1

Tonnes	Min. diameter bolt	Min. free contact width
1	23	35
2	32	40
3	35	47
4	38	50
5	42	53
6	46	60
8	50	67
10	56	75
12	58	80
15	70	96
20	78	104
25	84	112
30	90	120
35	96	128
40	102	136
50	120	160

Smaller diameter connections and insufficient free contact width, may adversely affect lifting safely and cause serious damage to the roundsling.

Resistance against acids

Acids	Strength	Temp.	Processing time	Observed strength loss ca (%)
Acetic acid	Glacial acetic acid	80°C	72 hours	5
Formic acid	90%	80°C	72 hours	10
Oxalic acid	Saturated solution	80°C	72 hours	15
Hydrofluoric acid	40%	25°C	1 week	0
Hydrobromic acid	40%	30°C	4 weeks	5
Boric acid	15%	30°C	4 weeks	20
Phosphoric acid	98%	70°C	5 weeks	45
Phosphoric acid	50%	70°C	5 weeks	15
Uric acid	Saturated solution	70°C	4 months	0
Hydrogen cyanide	Moist gas	22°C	4 months	0

The strength properties of the Polyester are affected by alkalis, the effect is depending on temperature and time. At low concentrations and normal temperature resistance are good.

Polyester Lifting Information

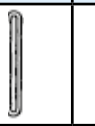
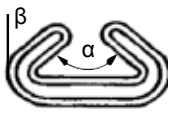
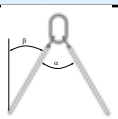
When using the sling for the first time, read the manufacturers certificate and instructions/education.

1. Always plan the lift carefully before proceeding with the operation.
2. Always check that the length and WLL stated on the sling label are suitable for the intended use.
3. Examine the sling for damage and defects before use. Never use a damaged or defective sling.
4. Never overload!
5. Make sure that the load is lifted vertically, centred above the point of gravity.
6. Use identical slings in case of multi- legged lifting and take the lifting angles into account when choosing equipment.
7. Do not tie knots on the slings to shorten or join them.
8. Never lift with twisted or entwined slings.
9. Place load-bearing seams and joints between the hook and the load.
10. Protect the sling from sharp edges using edge protection or protective sleeves.
11. Avoid shock loading and snatch lifting.
12. Do not drag the sling, with or without load, on the ground.
13. Keep polyester slings away from alkalis (for example ammonia and caustic soda). If in doubt about exposure to chemicals, check with your supplier.
14. Do not use polyester slings in temperatures over +100°C.
15. Examine slings after use and remove from service if visible damage is discovered.
16. Do not stand under the suspended load or between load and other objects in proximity, to avoid being injured from falling or moving load.
17. To avoid injuries, keep hands, feet and body away from sling, when lifting.

Maintenance

1. Store the equipment in a dry place.
2. Ensure that seams and labelling are undamaged.
3. The equipment can be cleaned by washing in a petroleum-based detergent and rinsing in water.
4. Roundslings with damaged sleeving, allowing dirt to enter, should be discarded.
5. Roundslings with broken yarns as a result of damaged sleeving must be discarded.
6. Roundslings must be inspected regularly for knots and irregularities, indicating yarn breakage. Discard if found.
7. Webbing slings: Discard in case of serious damage due to friction or wear and tear (appears like a blank and hard or "hair-like" surface.
8. Webbing slings: Discard if/when edge wear/ damage exceeds 5% of its width.
9. Webbing slings: Repair or discard when eye sleeving is worn out.
10. Slings must be regularly inspected, according to local statutory requirements. Records of inspections must be maintained.

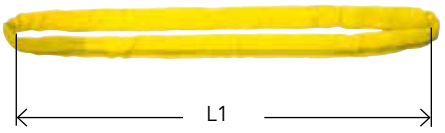
Working Load Limits (tonnes)

	Straight lift	Choked lift	Straight basket hitch			Two part choker		Three and four part choker	
									
			Parallel	β 0-45° α 0-90°	β 45-60° α 90-120°	β 0-45° α 0-90°	β 45-60° α 90-120°	β 0-45° α 0-90°	β 45-60° α 90-120°
Cover colour	Working Load Limits								
	1	0.8	2	1.4	1	1.4	1	2.1	1.5
Purple	1	0.8	2	1.4	1	1.4	1	2.1	1.5
Green	2	1.6	4	2.8	2	2.8	2	4.2	3.0
Yellow	3	2.4	6	4.2	3	4.2	3	6.3	4.5
Grey	4	3.2	8	5.6	4	5.6	4	8.4	6.0
Red	5	4.0	10	7.0	5	7.0	5	10.5	7.5
Brown	6	4.8	12	8.4	6	8.4	6	12.6	9.0
Blue	8	6.4	16	11.2	8	11.2	8	16.8	12.0
Orange	10	8.0	20	14.0	10	14.0	10	21.0	15.0
Orange	12	9.6	24	16.8	12	16.8	12	25.0	18.0
Orange	15	12.0	30	21.0	15	21.0	15	31.5	22.5
Orange	20	16.0	40	28.0	20	28.0	20	42.0	30.0
Orange	25	20.0	50	35.0	25	35.0	25	52.5	37.5
Orange	30	24.0	60	42.0	30	42.0	30	63.0	45.0
Orange	35	28.0	70	49.0	35	49.0	35	73.5	52.5
Orange	40	32.0	80	56.0	40	56.0	40	84.0	60.0
Orange	50	40.0	100	70.0	50	70.0	50	105.0	75.0
Orange	60	48.0	120	84.0	60	84.0	60	126.0	90.0

Properties of polyester fibre

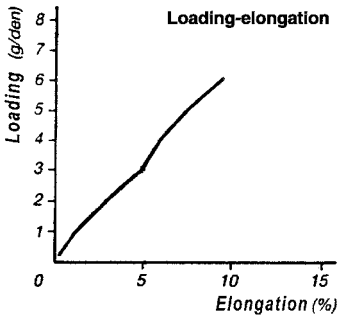
Physical properties

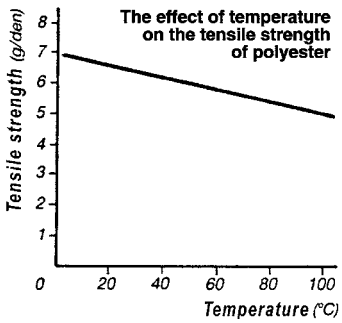
Specific weight: ca 1.38
Melting point: 260°C
Sensitivity to low temperature: No effect down to -40°C
Aging: Very low



L1 = Effective length

Examples of the properties of polyester fibre





Elongation properties webbing

Polyester webbing has an elongation to break of approximately 15-20%. The first time a webbing lashing or lifting assembly is loaded, it can elongate slightly when the fibres settle.

Chemical properties

Polyester offers good resistance to most acids provided the concentration does not exceed 50%.

Lashing & Transport

Chain Tensioner • Lashing Straps • Other Lashing Products

GUNNEBO Industries

Lashing & Transport

Technical Information

WARNING:
Failure to read, understand and comply with following instructions, working load limits and specifications in this publication could result in serious injury or damage to property.

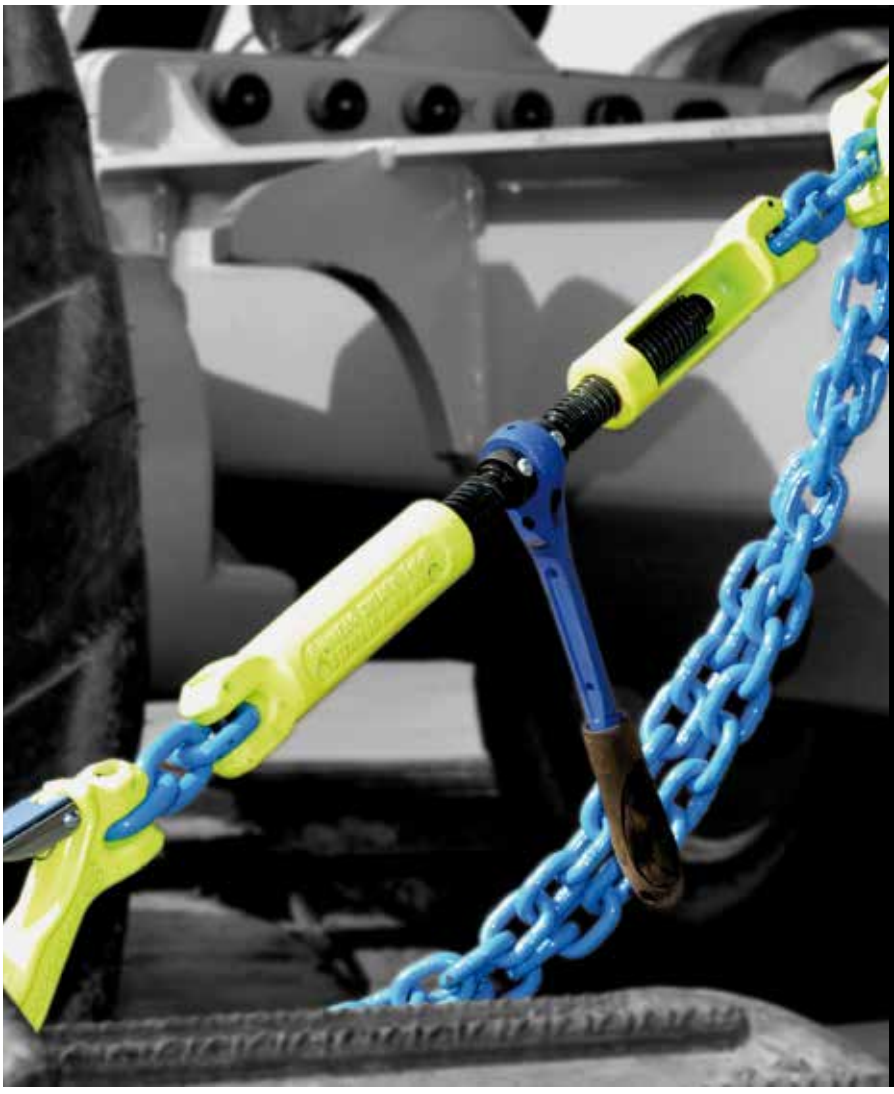
Chain Tensioner - GT

The chain tensioner from Gunnebo Industries, GT, is integral in one set. It is made of light weight Grade 10 material and the ratchet handle contributes to a fast and ergonomic lashing procedure. The GT is fitted with safety pins to prevent unintended release of the threaded end fittings.

GT has 25% increased Lashing Capacity (LC) compared to Grade 8 lashings and high Standard Tension force (STF) thanks to the unique ratchet handle

Our chain tensioner is designed to be compatible with the GrabiQ product range, enabling the choice of robust end-hooks with latches. Can also be provided as approved for lifting purposes.

Unique Benefits With our Chain Tensioner



Short Handle

- Fully protected ratched mechanism with 8 steps per 90 degree pull, enabling use in very narrow spaces.
- Easy to change direction
- The rubber handle decreases the risk of slipping and is convenient in cold climates

Open Design

- For easier and faster cleaning and lubrication
- Allows dirt to fall through instead of building up
- Two drain holes in the body prevent water residue.

Trapezoidal Thread

- Makes the thread less sensitive to dirt and particles
- Low-friction treated for trouble free operation
- Makes lashing faster
- Safety pins prevents unintended unwinding

All dimensions in mm

Chain Lashing System

Gunnebo Industries offers a complete chain lashing system approved according to EN 12195-3. The system has been developed with focus on the user's needs and working environment, and with safety as highest priority. The unique Midgrab chain shortener saves valuable time and effort, and is a natural part of an efficient and effective chain lashing system.

GT Chain Lashing System offers 25% increased Lashing Capacity (LC) compared to Grade 8 lashings.

End Fitting

Lashing hooks in grade 10, such as the EGKN Sling Hook with a heavy duty latch or the GBK Griplatch Safety Hook. Marked with positive indication of the manufacturer, product designation, size, batch number and grade.

ID-tag

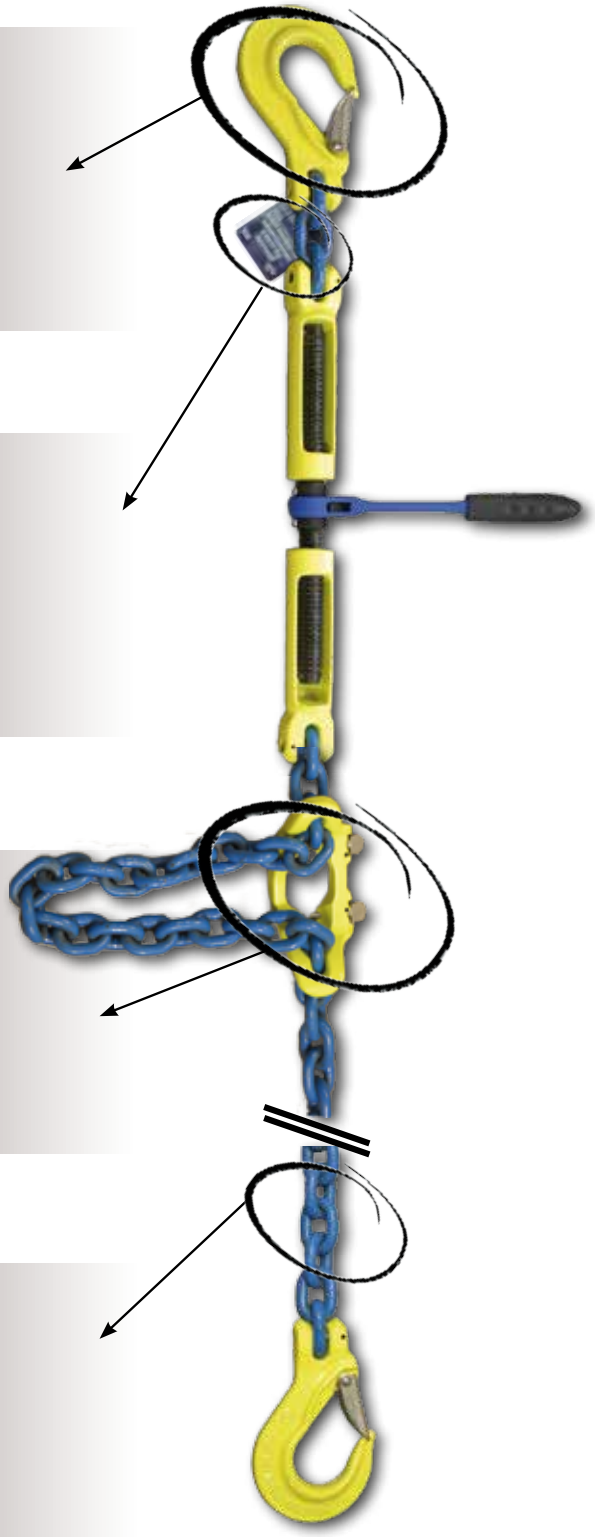
The ID-tag must state the lashing Standard, capacity, tension force, traceability and name of manufacturer. It must also clearly say that the set is for lashing only, lifting is prohibited

Shortening Function

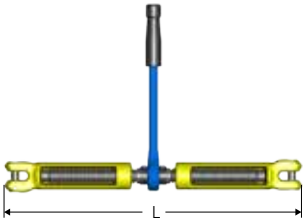
The Midgrab offers instant mounting on any part of the chain, with the ability to shorten the chain in either direction. It is designed to prevent the chain from disengaging. Marked with positive indication of the manufacturer, product designation, size, batch numberand grade

Chain

Gunnebo Industries high tensile short link chain, grade 10 = 1000 N/mm^2 type KLA-10-10, LC = 80 kN. Surface treatment: Powder coated. ID-marking of the chain: 10G



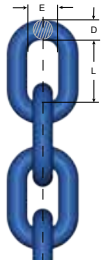
All dimensions in mm



Chain Tensioner GT

Art. no	Model	Lashing capacity (kN)	STF (daN)	L = Min. length (mm)	L = Max. length (mm)	Weight (kgs)
Z101336	GT-8-10	50	2800	400	600	3.3
Z101337	GT-10-10	80	2800	400	600	3.3

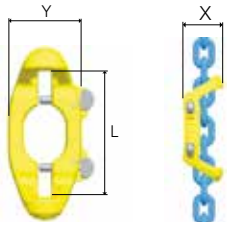
GT Chain Tensioner also available in a lifting version - se page 2:21.



Chain GrabiQ Grade 10

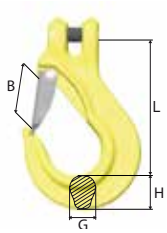
Short link, KL

Art. no.	Code	WLL tonnes	Lashing capacity (kN)	D nom. mm	L » mm	E » mm	Weight kgs/m	MPF kN
Z802301	KLA-8-10	2.5	50	8	24	11	1.5	63
Z801921	KLA-10-10	4.0	80	10	30	14	2.3	100



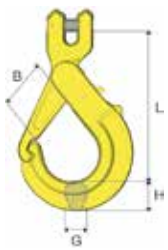
Midgrab MIG with locking pins

Art. no.	Code	WLL tonnes	Lashing capacity (kN)	L	X	Y	Weight kgs
B14303	MIG CC-8-10	2.5	50	95	50	60	0.7
B14313	MIG CC-10-10	4.0	80	125	70	77	1.1



Sling Hook EGKN

Art. no.	Code	WLL tonnes	Lashing capacity (kN)	L	B	G	H	Weight kgs
B14461	EGKN-8-10	2.5	50	95	28	17	23	0.5
B14462	EGKN-10-10	4.0	80	121	35	23	31	1



Safety Hook GBK

Art. no.	Code	WLL tonnes	Lashing capacity (kN)	L	B	G	H	Weight kgs
Z100759	GBK-8-10	2.5	50	119	36	20	22	0.8
Z100760	GBK-10-10	4.0	80	150	47	22	29	1.4

Complete set for Lashing GT
with chain, hooks and MIG Shortener

Lashing GT
with GG hooks

Lashing Chain GrabiQ
with hooks in both ends

All dimensions in mm

Lashing 4 - 10 Tonnes

EN 12195-2

Art. no.	Description	Colour	Width	Breaking strength (t)	EN 12195-2 LC daN	EN 12195-2 STF daN
Complete lashing						
M275141	0.4+9.5 m with wire hook	Yellow	75	10.0	4000	305
Complete lashing						
M135098	0.4+7.5 m with wire hook	Blue	50	5.0	2000	350
M136090	0.4+9.5 m with wire hook	Blue	50	5.0	2000	350
Complete lashing						
M134098	0.4+ 7.5 m wire hook	Blue	50	4.0	1700	340
M134090	0.4+9,5 m wire hook	Blue	50	4.0	1700	340
M24595W	10m endless	Blue	50	5.0	4000	340
Ratchet with short straps						
M135051K	0.4m with wire hook	Blue	50	4 & 5	2000	

Lashing 1 - 4 Tonnes

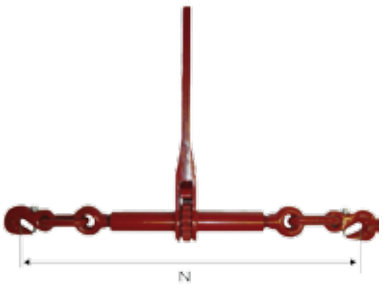
EN 12195-2

Art. no.	Description	Colour	Width mm	Breaking strength (t)	EN 12195-2 LC daN	EN 12195-2 STF daN
Complete lashing						
M140090	0.5+4.5 m with wire hook	Orange	35	2.5	1000	180
M140091	0.5+5.5 m with wire hook	Orange	35	2.5	1000	180
M14P00W	5 m endless (single web.)	Orange	35	5.0	2000	
Complete lashing stainless						
M22210K	0.4+9.5 m with wire hook	Blue	50	3.0	1500	305
Complete lashing						
M150101	0,4+3,6 m with sewn-on eyes	Blue	26	1.5	700	150
M150102	0,4+3,6 m with wire hook	Blue	26	1.5	700	150
M150110	0,4+4,5 m with wire hook	Blue	26	1.5	700	150
M150103	5 m endless	Blue	26	3.0	1400	150
Complete lashing						
M151002	0.4+3.6 m with sewn-on eyes	Orange	25	0.7	300	100
M151003	0.4+3.6 m with wire hook	Orange	25	0.7	300	100
M151005	0.4+4.5 m with wire hook	Orange	25	0.7	300	100
M151001	5 m endless	Orange	25	1.4	600	100

Rigging Screw with Ratchet Handle

Hooks with locking pins

Art. no.	Type	For chain diam. mm	Breaking strength approx. tonnes	N	Tensioning length mm
G009860018	RS	10 mm	12.6	615	165
G009860023	RS	13 mm	21.6	695	158

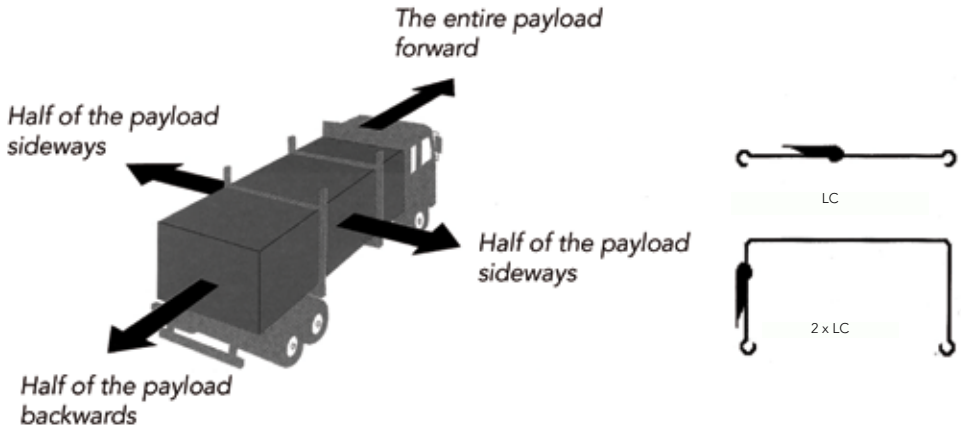


All dimensions in mm

Information for Use and Maintenance of Web Lashing

1. In selecting and using web lashings, consideration shall be given to the required lashing capacity, taking into account the mode of use and the nature of the load to be secured. The size, shape and weight of the load, together with the intended method of use, transport environment and the nature of the load will affect the correct selection. For stability reasons free-standing load units must be secured with a minimum of one pair of web lashings for frictional lashing and two pairs of web lashing for diagonal lashing.
2. The selected web lashings shall both be strong enough and of the correct length for the mode of use. Basic lashing rules:
   - Plan the fitting and removal operations of lashing before starting a journey
   - Keep in mind that during journeys parts of the load may have to be unloaded
   - Calculate the number of web lashings
   - Only web lashings designed for frictional lashing, marked with STF on the label, are to be used for frictional lashing
   - Check the tension force periodically, especially shortly after starting the journey.
   - The handle must be in a closed position during transport.
3. Because of different behaviour and elongation under load conditions, different lashing equipment (i.e lashing chain and web lashings) shall not be used to lash the same load. Consideration shall also be given to ancillary fittings (components) and lashing devices in the load restraint assembly are compatible with the web lashing.
4. During use flat hooks shall engage over the complete width of the bearing surface of the strap.
5. Release of the web lashing: Care should be taken to ensure that the stability of the load is independent of the lashing equipment and that the release of the web lashing does not cause the load to fall off the vehicle, thus endangering the personnel. If necessary, attach lifting equipment for further transportation, before releasing the tensioning device in order to prevent accidental falling and/or tilting of the load.
6. Before attempting to unload, the web lashings shall be released so that it can be lifted freely from the load platform.
7. During loading and unloading attention has to be paid to proximity of any low overhead power lines.
8. The materials from which web lashings are manufactured have a selective resistance to chemical attack. Seek the advice of the manufacturer or supplier if exposure to chemicals is anticipated. It should be noted that the effects of chemicals may increase with rising temperature. Polyester has good resistance to mineral acids but is attacked by alkalis. Solutions of acids or alkalis which are harmless may become sufficiently concentrated by evaporation to cause damage. Take contaminated webbings out of service at once, thoroughly soak them in cold water, and dry naturally.
9. Web lashings complying with EN 12195-2 are suitable for use in the following temperature ranges: – 40 °C to + 120 °C for polyester (PES). These ranges may vary in a chemical environment. In this case the advice of the manufacturer or supplier shall be sought.
10. Changing the environmental temperature during transport may affect the forces in the web lashing. Check the tension force after entering warm areas. Web lashings shall be rejected or returned to the manufacturer for repair if they show any signs of damage. The following criteria are considered to be signs of damage:
    - Only web lashings bearing identification labels should be repaired.
    - If there is any accidental contact with chemical products, a web lashing shall be removed from service and the manufacturer or supplier shall be consulted
    - for web lashings (to be rejected): tears, cuts, nicks and breaks in load bearing fibres and retaining stitches; deformations resulting from exposure to heat
    - for end fittings and tensioning devices: deformations, splits, pronounced signs of wear, signs of corrosion.
11. Care should be taken that the web lashing is not damaged by the sharp edges of the load on which it is used. A visual inspection before and after each use is recommended.
12. Only legibly marked and labelled web lashings shall be used.
13. Web lashings shall not be overloaded: Only the maximum hand force of 500 N (50 daN on the label; 1 daN _ 1 kg) shall be applied. Mechanical aids such as levers, bars etc. as extensions are not to be used unless they are part of the tensioning device.
14. Never use a knotted web lashing.
15. Damage to labels shall be prevented by keeping them away from sharp edges of the load and, if possible, from the load itself.
16. The webbing shall be protected against friction, abrasion and damage from loads with sharp edges by using protective sleeves and/or corner protectors.

The lashing must take:



Gunnebo Lifting lashings with a breaking load of 500 kg and above are clearly marked with labels.

The dimensioning of a lashing arrangement must be based on local regulations

Technical Explanations for: Standard EN 12195-2

LC = Lashing capacity:	Maximum force for use in straight pull that a web lashing is designed to sustain in use.
Safety factor:	2:1 complete system and metal parts. 3:1 non-sewn polyester webbing.
Elongation:	Maximum 7% when polyester webbing subjected to the LC.
Marked:	Traceability code similar to lifting products. A protected label ensures traceability at all circumstances.
1dAN:	ca 1 kg.

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