

Chain

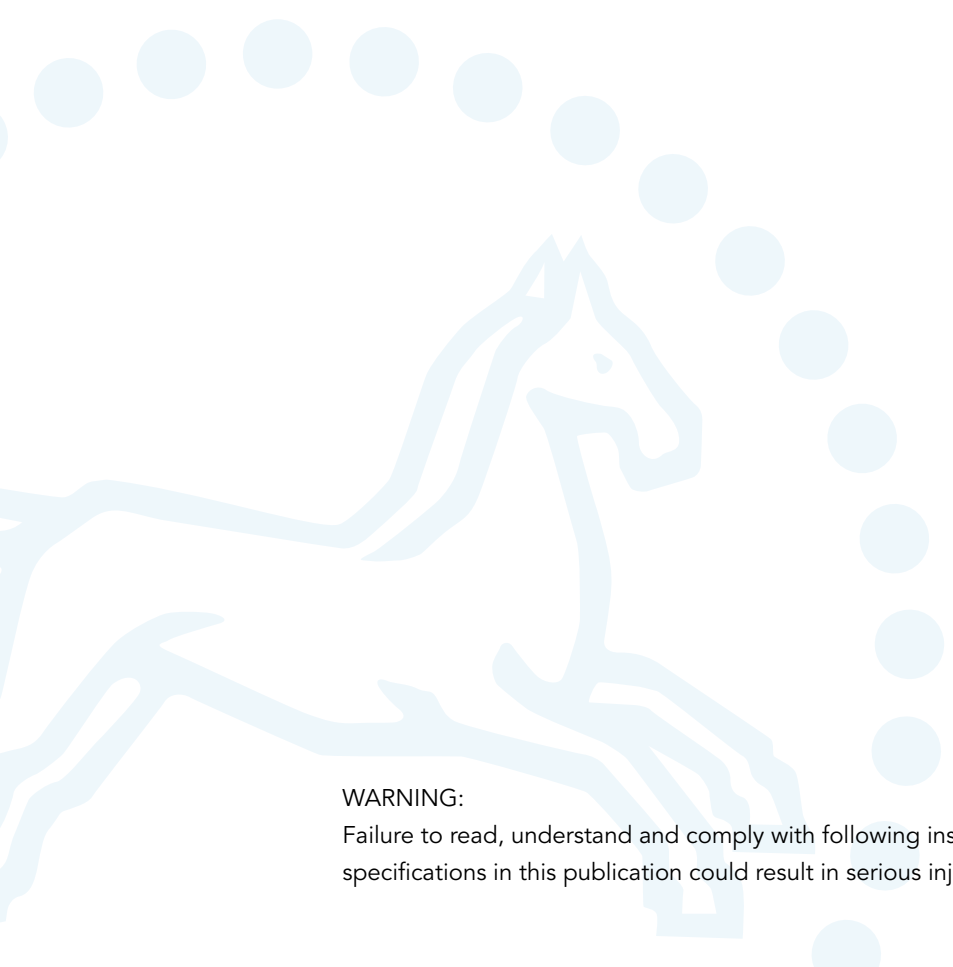
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Security Chain

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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 Manufacturing - Quality and Strength Requirements

Chains are divided into grades based on minimum nominal breaking load.

Chain Grade	Surface treatment	Code	Minimum breaking load N/mm ²	Load factors			Typical use
				WLL	MPF	Breaking force	
2	Galvanized Z Bright B	KL	240	1	2.4	4.5	Farming, mooring, general use
		HL	240	1	2.4	5.2	
5	Blue Å	HL	500	1	2.4	4.5	Lashing, forestry / timber industry
		LL	500	1	2.5	5.2	
8	Yellow U Black B	KL	800	1	2.5	4	General lifting (KL), Container lashing (LL). Extra heavy towing (ML), Lashing (KL, LL).
		ML	800	1	2.5	5	
		LL	800	1	2.5	5	
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 operator continuously control that the link meet the specified dimensions before as well as after welding.

One 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 test, the chain is heat treated.

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

Proof Load

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

Use

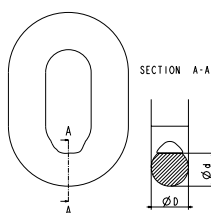
- Never lift with a twisted chain.
- Use shortening hooks, knotting is not allowed.
- Use edge protectors to prevent sharp edges from damaging the chain.



Maintenance

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

1. Overloaded chain slings must be taken out of service.
2. Chain and components incl. 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 Lifting dealer.

Extreme Temperature Conditions

The in service temperature effects the WLL as following :

Chain temperature (°C)	Reduction in WLL	
	Grade 8 & Grade 8+	Grade 10
-40 to +200	0%	0%
+200 to +300	10%	Not allowed
+300 to +400	25%	Not allowed

After short heat exposure, maximum one hour, the sling reverts to it's 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.

GrabiQ Short Link Chain, KL



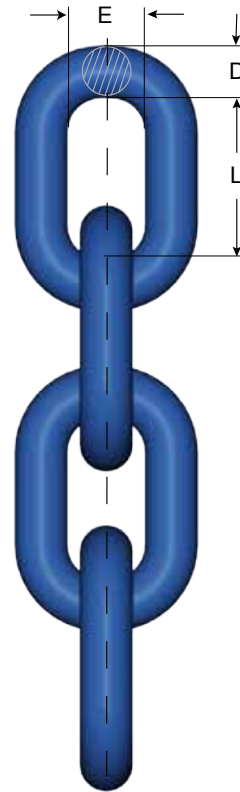
Heat treatment
Quenched and tempered

Surface treatment
Painted blue

Marking Grade 10
10G

Marking Grade 8+
8+

Charge no.
SWE



Art. no. Box/Barrel	Code	D nom. mm	L » mm	E » mm	Weight kgs/m	WLL tonnes	MPF kN	Breaking force kN
Z801909 - 2x200 m	KLA 6-10	6	18	8	0.8	1.5	37	60
Z801915 - 3x100 m	KLA 8-10	8	24	11	1.4	2.5	62.5	100
Z801921 - 2x100 m	KLA 10-10	10	30	14	2.3	4	100	160
Z801927 - 1x125 m	KLA 13-10	13	39	18	3.8	6.7	162	260
Z801930 - 1x 92 m	KLA 16-10	16	48	22	5.6	10	250	402
Z802071 - 1 x 30.5 m	KLA 20-10	20	60	29	9.4	16	393	630
Z801594 - 2 x 200 m	KLA 6-8+	6.6	18	8.9	1.0	1.5	37	60
Z801485 - 3 x 100 m	KLA 8-8+	8.8	24	11.2	1.7	2.5	62.5	100
Z801486 - 2 x 100 m	KLA 10-8+	11.0	30	14.4	2.6	4	100	160
Z801487 - 1 x 125 m	KLA 13-8+	14.3	39	19.2	4.5	6.7	162	260
Z801597 - 1 x 92 m	KLA 16-8+	17.3	48	23.0	6.7	10	250	402

NOTE! For chain grade 10, the maximum inservice temperature is 200° C

Short link, KL

EN 818-2

Heat treatment

Quenched and tempered.

Surface treatment

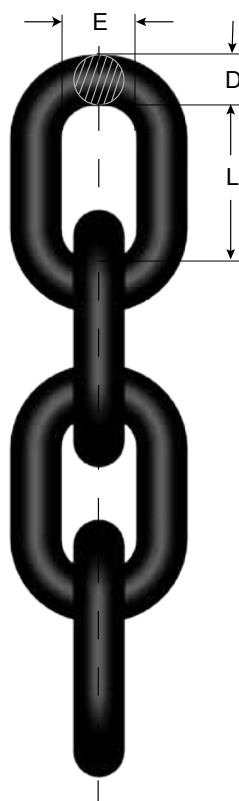
Painted black

Marking

8G

Charge no.

SWE



4

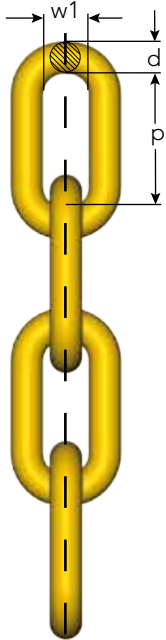
Art. no. Box	Code	D nom. mm	L mm	E mm	Weight kgs/m	WLL tonnes	Manufacturing proof force kN	Breaking force kN
Z802174 - 1 x 200 m	KLB 6-8E	6	18	8.5	0.8	1.12	28.3	45.2
Z802175 - 1 x 200 m	KLB 7-8E	7	21	10	1.1	1.5	38.5	61.6
Z802176 - 1 x 200 m	KLB 8-8E	8	24	11	1.4	2	50.3	80.4
Z802156 - 1 x 100 m	KLB 10-8E	10	30	14	2.2	3.15	78.5	126
Z802157 - 1 x 100 m	KLB 13-8E	13	39	18	3.7	5.3	133	212
Z802177 - 1 x 100 m	KLB 16-8E	16	48	22	5.6	8	201	322
Z801203 - 1 x 100 m	KLB 19-8E	19	57	26	7.8	11.2	284	454
Z801228 - 1 x 50 m	KLB 22-8E	22	66	30	10.6	15	380	608
Z801231 - 1 x 25 m	KLB 26-8E	26	78	35	14.8	21.2	531	849
Z801232 - 1 x 25 m	KLB 32-8E	32	96	43	21.6	31.5	804	1290

Mid-link Chain, ML Grade 8

Heat treatment
Quenched and tempered

Surface treatment
Painted yellow (U)

Marking
GF



Not for lifting purposes.

Art. no.	Code	d nom. mm	P » mm	w1 » mm	Weight kgs/m	Breaking force kN	Standard length
Z601877	MLFU 10-8	10	40	14	2,0	126	2x200 m PF
Z600088	MLFU 13-8	13	55	20	3,3	212	2x125 m PF
Z600185	MLFU 16-8	16	65	22	5,0	322	2x92 m PF
Z800476	MLFU 19-8	19	75	29	7,1	454	1x100 m PB
Z800661	MLFU 22-8	22	88	30	9,4	610	1x50 m PB

PF = Barrel PB = Palletbox

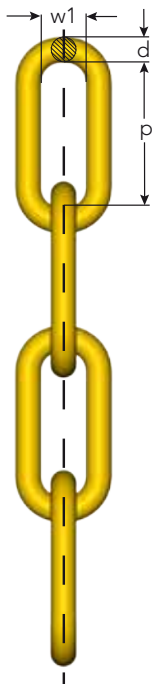
Long-link Chain, LL Grade 8

Heat treatment
Quenched and tempered

Surface treatment
Painted yellow (U)

Marking
8G

Standard lengths 100 meters.



Not for lifting purposes.

Art. no. 1 x 100 m	Code	d nom. mm	p » mm	w1 » mm	Weight kgs/m	Breaking force kN
Z801933	LLU 6-8	6	35	10	0,6	45
Z801934	LLU 9-8	9	53	15	1,4	102
Z801935	LLU 11-8	11	64	18	2,1	154
Z801936	LLU 13-8	13	80	22	2,9	212
Z800426	LLU 16-8	16	90	27	4,6	322

Short-link Chain, KL

SMS 1502Grade 2

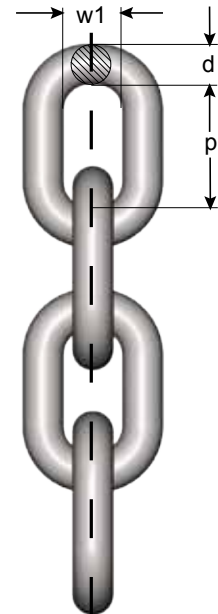
Surface treatment

Hot dip galvanized (Z)

(KLZ 3-2 Electro-galvanized)

Not for lifting purposes.

Code	d nom. mm	p » mm	w1 » mm	Weight kgs/m	Breaking force kN	Reel no.	Meter/ reel	Meter/ carton
KLZ 3-2	3	10	4.5	0.2	3.4	1	75	
KLZ 4.5-2	4.5	17	7	0.4	7.5	2	50	
KLZ 6-2	6	18	10	0.8	13.5	2	30	40
KLZ 8-2	8	24	11	1.4	24			20
KLZ 9-2	9	28	13	1.8	32			20



Code	Art. no. L = 25 m	Art. no. reel	Art. no. carton
KLZ 3-2	Z269152	Z281752	-
KLZ 4.5-2	Z100114	Z307842	-
KLZ 6-2	Z100017	Z307949	Z482866
KLZ 8-2	Z348803	-	Z482890
KLZ 9-2	Z348706	-	Z482905

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Half Long Link, HL

SMS 1503

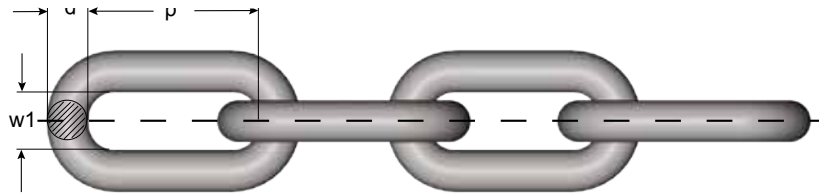
Grade 2

Surface treatment

Zinc-plated	Galvanized
2.5 - 4.5 mm	5 - 16 mm

Not for lifting purposes.

HL grade 2 chain is delivered in standard 25 meter lengths. Special dimensions and lengths can be delivered in cardboard boxes, plastic bags or on plastic reels.



Code	Zinc coated Art. no. L = 25 m	Bright Art. no. L = 25 M	Zinc coated Art. no. reel	Zinc coated Art. no. carton
HL 2.5-2	Z136915	-	Z261340	-
HL 3-2	Z137615	-	Z261447	-
HL 3.5-2	Z378828	-	Z311946	-
HL 4-2	Z137518	-	Z284543	Z483029
HL 4.5-2	Z137411	-	Z288377	-
HL 5-2	Z137314	Z163212	Z284941	Z483061
HL 6-2	Z136216	Z163018	Z261544	Z483168
HL 7-2	Z136119	Z162910	-	Z483184
HL 8-2	Z136012	Z162813	-	Z483192
HL 9-2	Z135914	Z162716	-	Z483265
HL 10-2	Z135817	-	-	-
HL 13-2	Z135613	-	-	-
HL 16-2	Z101466	-	-	-

Long Link Chain LL DIN 5685 C, zink coated

Grade 2

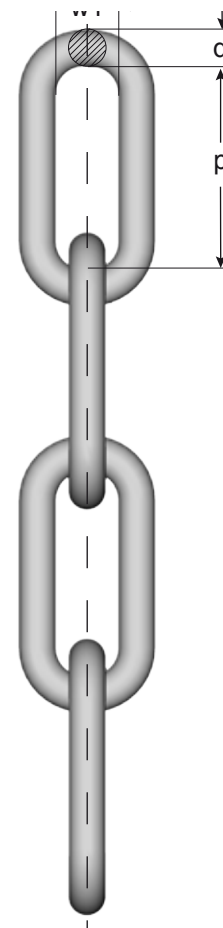
Long link chain LL acc. to DIN 5685 C, galvanized.

20 mm DIN 763

Commercial quality. **Not for lifting purposes.**HL grade 2 chain is delivered in standard 25 meter lengths.
on plastic reels.

Art. no.	Code	Length m/reel	Reel no.	Length m	Ø d	P » mm	W1 » mm	Weight kgs/m ca	Breaking force (kN)
G009866025	LLZ-2.5-2	100	1		2.5	24	5	0.1	2.0
G009866030	LLZ-3-2	75	1		3	26	6	0.15	2.8
G009866040	LLZ-4-2	75	2		4	32	8	0.27	5.1
G009866050	LLZ-5-2	50	2		5	35	10	0.43	7.9
G009866060	LLZ-6-2	40	2		6	42	12	0.63	11.7
G009866080	LLZ-8-2			25	8	52	16	1.1	20.4
G009866090	LLZ-9-2			25	9	59	18	1.41	25.5
G009866100	LLZ-10-2			25	10	65	20	1.75	31.6
G009866130	LLZ-13-2			25	13	82	26	2.95	54.0
G009866160	LLZ-16-2			25	16	100	32	3.56	81.6
G009866200	LLZ-20-2			50	20	120	35	7.24	160

Art. no.	Code	Length m / bag	Weight kgs / bag
G009866234	LLZ-3-2	4	0.6
G009866244	LLZ-4-2	4	1.1
G009866252	LLZ-5-2	2	0.9
G009866254	LLZ-5-2	4	1.8
G009866256	LLZ-5-2	6	2.6
G009866258	LLZ-5-2	8	3.6
G009866262	LLZ-6-2	2	1.3
G009866264	LLZ-6-2	4	2.6
G009866266	LLZ-6-2	6	3.8
G009866268	LLZ-6-2	8	5.2
G009866282	LLZ-8-2	2	2.2
G009866284	LLZ-8-2	4	4.4
G009866286	LLZ-8-2	6	6.6
G009866288	LLZ-8-2	8	8.8
G009866292	LLZ-9-2	2	2.9
G009866294	LLZ-9-2	4	5.8
G009866296	LLZ-9-2	6	8.7
G009866298	LLZ-9-2	8	11.6



4

Gunnebo Lifting Security Chain with Padlock

Tested and Certified

Gunnebo Lifting security chain system is made of high-tensile case hardened alloy steel. The surface is galvanised 25 µm and chromated. The chain is supplied with a matching padlock.



Security Grades and Usage:

- Grade 2: For locking of cellars and attics, boats (<200 kg) and bicycles, etc
- Grade 3: Indoor locking of doors, gates, hatches, cages and gratings. Locking of boats (>200 kg) and boat engines. Locking of motorcycles, trailers etc.
- Grade 4: Outdoor locking of gates, containers, hatches etc.

If you are uncertain of which security grade to use, please contact your insurance company and check your local prescribed regulations.

Our New Brand:

Class 2

G-Lock™₂

Class 3

G-Lock™₃

Class 4

G-Lock™₄

Security Chain GLK with Padlock

Art. no.	Code	Material Ø mm	Padlock class	Lock type ABLOY	Length m	Protective cover
G009868105	GLK *	7	2	PL 330 C	1.25	Black
G009868005	GLK	7	2		1.25	Black
G009868110	GLK *	10	3	PL 340 C	1.25	Black
G009868010	GLK	10	3		1.25	Black
G009868115	GLK *	10	3	PL 340 C	1.80	Black
G009868015	GLK	10	3		1.80	Black
G009868120	GLK *	13	4	PL 350 C	1.50	Black
G009868020	GLK	13	4		1.50	Black

* = Security chain including padlock



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Security Chain GLKO with Padlock

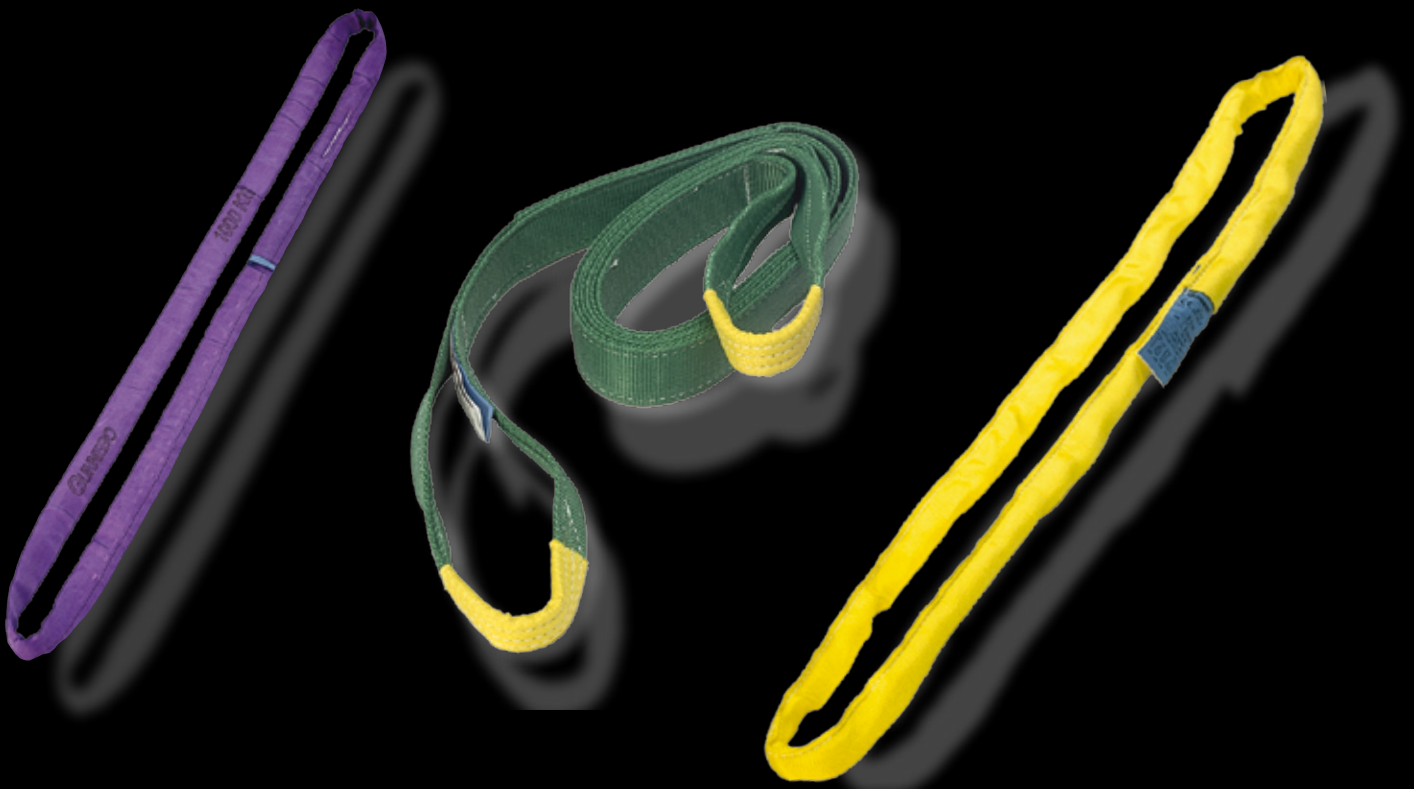
Art. no.	Code	Material Ø mm	Padlock class	Lock type ABLOY	Length m	Protective cover
G009868130	GLKO *	7	2	PL 330 C	2.5	Black
G009868030	GLKO	7	2		2.5	Black
G009868135	GLKO *	10	3	PL 340 C	1.5	Black
G009868035	GLKO	10	3		1.5	Black
G009868140	GLKO *	10	3	PL 340 C	2.5	Black
G009868040	GLKO	10	3		2.5	Black
G009868145	GLKO *	10	3	PL 340 C	4.0	Black
G009868045	GLKO	10	3		4.0	Black
G009868150	GLKO *	13	4	PL 350 C	2.5	Black
G009868050	GLKO	13	4		2.5	Black
G009868155	GLKO *	13	4	PL 350 C	4.0	Black
G009868055	GLKO	13	4		4.0	Black

* = Security chain including padlock



Polyester Lifting

Sling • Lashing • Webbing • Cargo securing



GUNNEBO
LIFTING