

Gunnebo Fishing and Aquaculture



The high wear resistance and
longer life system from Gunnebo



GUNNEBO
LIFTING

Gunnebo – Safety in every link

Gunnebo Industrier is one of the world’s leading manufacturers of complete lifting systems. The quality of our products is widely recognised as being the finest and our goal is to be world leader in our field. Quality will always be fundamental to Gunnebo, and everything we do is in line with the Gunnebo group’s strong dedication to safety for persons and property.

Gunnebo started its production as early as 1764 and is today an internationally fast-growing security group with 110 companies located in 32 countries. The Group has sales to a further hundred markets via agents and distributors. Gunnebo Engineering is a division within the Gunnebo Group. The division comprises the following business units: Gunnebo Lifting, Gunnebo Fastening, Gunnebo Blocks and Gunnebo Non Skid. Business Unit Lifting produces and sells chain and lifting components (such as coupling links, hooks and master links), wire rope, soft slings, round slings, ratchets, lashing and goods anchorage systems and specialised fishing equipment.

From the past to the Future



Gunnebo's first factory in 1764.

Gunnebo Lifting’s products are produced in Scandinavia. We have our own forging plants in Lonevåg, Norway (ANJA) and in Gemla, Sweden. Our other manufacturing units in Sweden are situated in Gunnebo (chain), Ramnäs (components) and in Junsele (soft products).



Gunnebo Specifications	3
Maintenance Instructions	4
Chain	5
Links	6
Hooks	7
Fishing Components	8
Gunnebo – ANJA Shackles	10
Spare Parts	11

WARNING:

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

Innovation

Gunnebo has always been in the frontline with quality and product development, many well known products have been patented and introduced by Gunnebo such as for example the original BK safety hook and lately the new GrabiQ system. The innovative products from Gunnebo have increased safety on sites all over the world. Our long experience combined with excellent design, high strength materials and rigorous quality assurance ensure the most reliable products on the market.

Quality to International Standard

The Gunnebo plants manufacturing chain and components in Sweden and Norway are certified in accordance with ISO 9001:2000 / ISO 9002 by Lloyds (LRQA) and NEMCO Norwegian accreditation.



Certificate of approval

Our Quality management system includes design, development, manufacturing, marketing and distribution. A close cooperation with our steel suppliers ensure that the raw material meets our stringent specifications, which means that we have control of every step from raw material to finished product.

We also work closely with our world markets and have official product approvals from the main national and international authorities incl. BG (Germany), SABS (South Africa), AIB (Belgium), Gostechnador (Russia) and many others.

Material Qualities

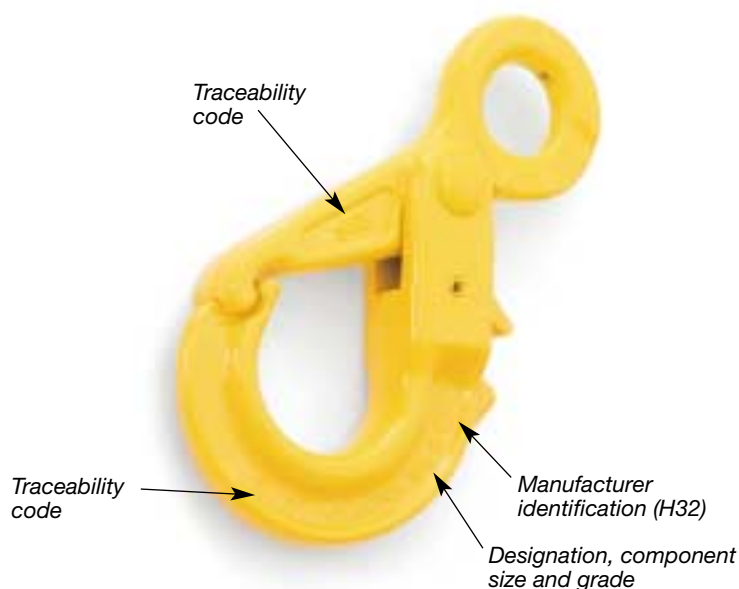
Gunnebo chain and components are made from quenched and tempered high tensile steel, a guarantee for very high strength, low weight, high wear resistance and longer life.

Normally the chain and components are delivered yellow painted. In the case extra resistance against corrosion is required, for example during operation in marine environments, hot dip-galvanised chain and components can be delivered. Hot dip galvanising will reduce the strength of the products with appr. 20 % but the lifetime of the product is normally considerable longer. This reduces servicing and change-out times and increases productivity. (Gunnebo – ANJA shackles are delivered hot dip galvanised as standard.)

If further resistance against corrosion is required we would recommend the use of Gunnebo Stainproof products. This material is a unique stainless steel with virtually no corrosion properties and the strength of Grade 80 material. Experience shows that Stainproof products have up to 10 times the life in seawater than standard high tensile steel. This means that with Stainproof components you would increase productivity even more.

Identification

Gunnebo components and shackles have traceability markings identifying the compatible size, material grade and batch code.



Certificates

Test certificates and 3.1.B material certificates can be delivered upon request.

Severe environment

Gunnebo Fishing & Aquaculture products must not be used in alkaline or acidic conditions without written permission from Gunnebo.

Comprehensive and regular examinations must be carried out when using Gunnebo Fishing & Aquaculture products in severe or corrosion inducing environments. In uncertain situations consult your Gunnebo distributor.

Use:

Minimum Breaking Load (MBL) is the minimum load under straight pull at which a new chain or component may break.

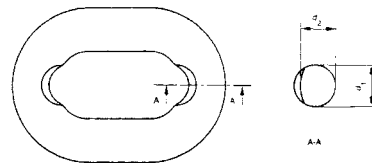
- Never overload the products.
- Don't load a twisted chain.
- Protect the chain against sharp edges.
- Never pointload a hook.
- The connected components should be able to articulate freely.
- Avoid snatch-loading

Maintenance Instructions

Periodic thorough examination must be carried out at least every 6 months or more frequently according to statutory regulations, type of use and past experience.

Chains with bent links, with cracks or gouges in the link should be replaced, as should deformed components such as bent master links, opened up hooks and any fitting showing signs of damage.

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 of the material measured in two directions.



Overloaded chain or components must be taken out of service.

NOTE: Hot dip galvanising or plating is not allowed outside the control of the manufacturer.



Inspection of chain.

Short link chain, Grade 8, for trawl fishing

Heat treatment:

Hardened, tempered and stress relieved

Surface treatment:

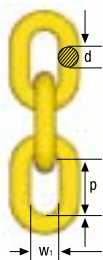
Yellow (U), Black (B) or Hot dip galvanised (Z) **

Marking:

GF

Packing:

10 to 16mm in barrel, > 16mm in pallet box



Designation	Min. Breaking Load (tonnes)		Link dimensions (mm)			Weight appr. (kgs/m)	Standard delivery lengths (m)
	Painted (U / B)	Galvanised (Z)	d	p	w ₁		
KLF-10-8	12,6	11	10	30	14,6	2,2	200
KLF-13-8	21,4	18	13	39	18,4	3,7	125
KLF-16-8	32,2	28	16	48	22,6	5,8	92
KLF-17-8	-	30	17	48	24	6,4	100
KLF-19-8	45,4	40	19	57	26	8,0	100
KLF-22-8	61,0	-	22	66	30	11,0	50
KLF-26-8	86,0	-	26	78	35	14,8	50

Mid link chain, Grade 8 for trawl fishing

Heat treatment:

Hardened, tempered and stress relieved

Surface treatment:

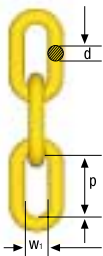
Yellow (U), Black (B) or Hot dip galvanised (Z) **

Marking:

GF

Packing:

10 to 16mm in barrel, > 16mm in pallet box



Designation	Min. Breaking Load (tonnes)		Link dimensions (mm)			Weight appr. (kgs/m)	Standard delivery lengths (m)
	Painted (U / B)	Galvanised (Z)	d	p	w ₁		
MLF-10-8	12,6	11	10	45	15	2,0	200
MLF-13-8	21,4	18	13	50	21	3,3	125
MLF-16-8	32,2	28	16	65	23	5,0	92
MLF-19-8	45,4	40	19	75	30	7,2	100
MLF-22-8	61,0	-	22	88	31	9,5	50
MLF-26-8	86,0	-	26	91	35	15,0	-

Long link chain, Grade 8 for trawl fishing & aquaculture

Heat treatment:

Hardened, tempered and stress relieved

Surface treatment:

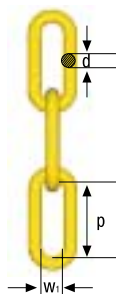
Yellow (U), Black (B) or Hot dip galvanised (Z) **

Marking:

GF

Packing:

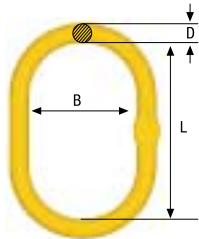
Pallet box



Designation	Min. Breaking Load (tonnes)		Link dimensions (mm)			Weight appr. (kgs/m)	Standard delivery lengths (m)
	Painted (U / B)	Galvanised (Z)	d	p	w ₁		
HL-9-8	10,2	9	9	53	15	1,4	100
HLC-11-8	15,4	13	11	64	19	2,1	100
HLC-13-8	21,4	18	13	80	22	2,9	100
HLC-16-8	32,2	28	16	89	27	4,6	100
LL-16-8	32,2	28	16	100	28	4,4	100
LL-19-8	45,4	40	19	100	28	6,5	100
LL-22-8	61,0	-	22	120	36	8,7	100
LL-26-8	86,0	-	26	140	41	12,2	50
LL-28-8	98,0	-	28	150	41	14,0	50
LL-32-8	128,0	-	32	170	44	19,0	50

Masterlink type MF with flattened section

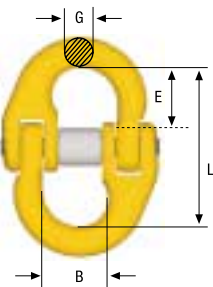
Connection to chain with coupling link type G / GF or Berglok



Designation	Min. Breaking Load (tonnes) Grade 8	Dimensions (mm)			Weight appr. (kgs)
		L	B	D	
MF-108-8	16	140	80	17	0,8
MF-1310-8	30	160	95	22	1,5
MF-1613-8	40	190	110	25	2,3
MF-2016-8	68	240	140	34	5,3
MF-2220-8	100	250	150	38	7,0
M-2622-8 *	112	250	150	40	7,8

* without flattened section

Note: Also available in hot dip galvanised version (20% load reduction)



Coupling link type GF

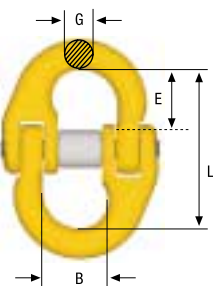
Delivered with straight load pin and locking bush with stainless steel spring

Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)				Weight appr. (kgs)
			L	B	G	E	
GF-10-8	12,6	10	68	25	11	26	0,3
GF-13-8	21,4	13	89	30	15	33	0,7
GF-16-8	32,2	16	105	36	19	40	1,1
GF-18/20-8	50,4	19	125	43	22	47	1,8
GF-22-8	61,0	22	152	50	24	59	3,0
GF-26-8	85,0	26	160	58	29	61	4,6
GF-32-8	128,8	32	200	70	38	78	8,6

Note: Chemical nickel plated load pins and stainless steel bush on special request. Spare kit:SKAF "SP" Stain Proof version, available in size 10-22mm

Coupling link type G

Delivered with load pin with reduced centre diameter and locking bush with stainless steel spring

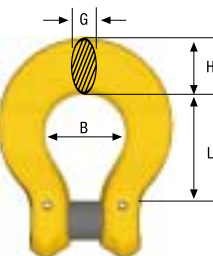


Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)				Weight appr. (kgs)
			L	B	G	E	
G-10-8	12,6	10	68	25	11	26	0,3
G-13-8	21,4	13	89	30	15	33	0,7
G-16-8	32,2	16	105	36	19	40	1,1
G-18/20-8	50,4	19	125	43	22	47	1,8
G-22-8	61,0	22	152	50	24	59	3,0
G-26-8	85,0	26	160	58	29	61	4,6
G-32-8	128,8	32	200	70	38	78	8,6

Note: Chemical nickel plated load pins and stainless steel bush on special request. Spare kit:SKA "SP" Stain Proof version, available in size 10-22mm

Berglok chain coupler type BLF

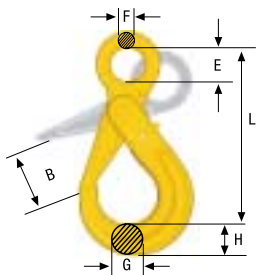
Delivered with stainless steel retaining pins



Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)				Weight appr. (kgs)
			L	B	G	E	
BLF-10-8	12,6	10	45	32	14	22	0,3
BLF-13-8	21,4	13	56	40	17	28	0,7
BLF-16-8	32,2	16	68	50	22	35	1,2
BLF-19-8	45,4	19	80	58	25	40	2,0

Safety hook type BK

With stainless steel spring

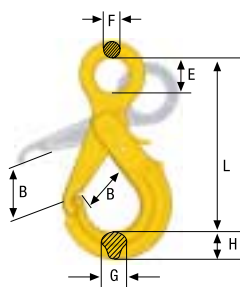


Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)						Weight appr. (Kgs)
			L	B	E	F	G	H	
BK-10-8	12,6	10	168	44	32	13	24	29	1,5
BK-13-8	21,4	13	208	54	40	16	30	38	2,7
BK-16-8	32,2	16	254	63	50	20	37	49	5,6
BK-18/20-8	50,4	19	290	68	60	22	42	56	7,9
BK-22-8	61,0	22	320	80	70	24	47	62	11,2

Spare kit: RDBK

Safety hook type OBK with griplatch

With stainless steel spring



Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)						Weight appr. (Kgs)
			L	B	E	F	G	H	
OBK-10-8	12,6	10	160	42	32	13	21	26	1,2
OBK-13-8	21,4	13	194	50	40	15	26	30	2,0
OBK-16-8	32,2	16	237	60	50	19	30	38	4,1
OBK-18/20-8	50,4	19	293	73	60	22	37	48	7,5
OBK-22-8	61,0	22	335	87	70	24	40	57	10,0

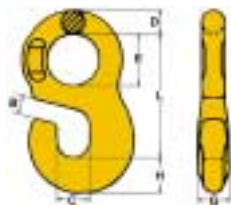
Spare kit: RDOBK



"SP" Stain proof Coupling link

G-hook type OFG

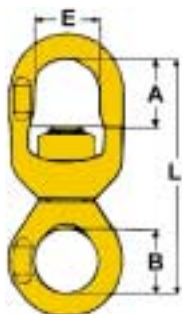
Direct hooking to Masterlink type MF, fishing swivel type LFS and Berglok



Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)							Weight appr. (Kgs)
			B	C	D	E	G	H	L	
OFG-10-8	12,6	10	11,7	20	14	32	19	21	76	0,4
OFG-13-8	21,4	13	14,5	26	18	40	25	28	95	1,1
OFG-16-8	32,2	16	17,0	32	22	50	30	33	119	1,7
OFG-19-8	45,4	19	20,5	38	26	60	36	40	144	3,1

Fishing swivel type LFS

With brass washer



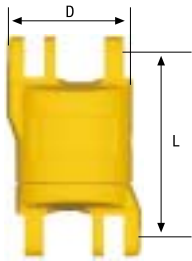
Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)				Weight appr. (Kgs)
			L	A	B	E	
LFS-10-8	12,6	10	144	39	42	42	1,1
LFS-13-8	21,4	13	175	48	48	48	2,2
LFS-16-8	32,2	16	215	62	60	61	3,7
LFS-19-8	45,4	19	255	78	72	73	5,0



Assembling of shackle to connection plate.

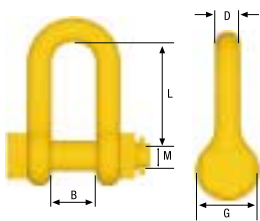
Roller-bearing swivel type SKLI

Fully rotational even at maximum load



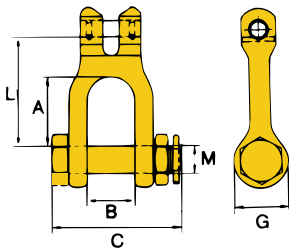
Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)		Weight appr. (Kgs)
			L	D	
SKLI-10-8	12,6	10	96	59	1,4
SKLI-13-8	21,4	13	120	75	2,9
SKLI-16-8	32,2	16	137	90	4,9
SKLI-18/20-8	50,4	19	159	104	7,2

Shackle type SA



Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)					Weight appr. (Kgs)
			L	B	D	G	M	
SA-10-8	12,6	10	52	24	13	35	16	0,4
SA-13-8	21,4	13	65	28	16	42	20	0,7
SA-16-8	32,2	16	72	30	18	46	22	1,0
SA-19-8	45,4	19	86	36	22	55	27	1,8
SA-22-8	61,0	22	94	40	25	62	30	2,5
SA-26-8	85,0	26	116	48	32	75	39	4,8

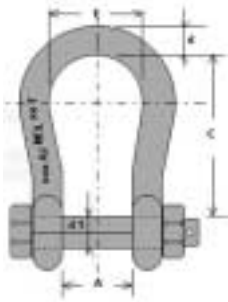
Clevis shackle type GSA



Designation	Min. Breaking Load (tonnes) Grade 8	For chain size (mm)	Dimensions (mm)					Weight appr. (Kgs)	
			A	B	C	G	L		M
GSA-10-8	12,6	10	48	34	93	40	80	20	0,9
GSA-13-8	21,4	13	65	50	118	44	8098	22	1,7
GSA-16-8	32,2	16	70	60	141	54	114	27	3,0



Our products in use by fishermen in Spain.



ANJA - Extra wide Anchor shackle with safety bolt

Shackle adapted for direct coupling / connection between rope / thimble or chain. Specially developed for anchoring of sea-based aquaculture mooring systems.

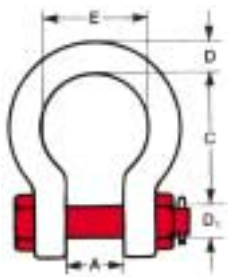
Finish: All parts hot dip galvanised

Rope diameter (mm)	Min. Breaking Load (tonnes) Grade 6	Bolt dia. D1	Inside with A	Inside length C	Inside bow E	Weight appr. (Kgs)
32	28	22	44	100	58	1,4
40	40	25	52	125	68	2,1
48	60	28	62	150	89	3,7
64	90	32	82	170	98	5,7

ANJA - Anchor shackle with safety bolt

Standard: U.S. Fed Spec. RR-C-271

Finish: All parts hot dip galvanised



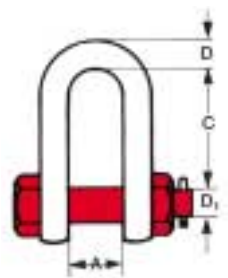
Nominal size D inches/mm	WLL=Working Load limit (t) MBL=Min. Breaking Load (t)				Bolt dia. D1	Inside with A	Inside length C	Outside eye D2	Inside bow E	Weight appr. (Kgs)
	Grade 6		Grade 8							
	WLL	MBL	WLL	MBL						
5/8"-16	3,25	19,5	3,25	25,9	19	27	60	40	42	0,7
3/4"-19	4,75	28,5	4,75	37,9	22	31	71	47	51	1,2
7/8"-22	6,5	39	6,5	51,8	25	37	84	50	58	1,7
1"-25	8,5	51	8,5	67,8	28	43	95	58	68	2,5
1.1/8"-28	9,5	57	9,5	75,8	30	46	108	64	74	3,4
1.1/4"-32	12,0	72	12,0	95,7	35	52	119	72	83	4,8
1.3/8"-35	13,5	81	13,5	107,7	38	57	132	74	89	7,0
1.1/2"-38	17,0	102	17,0	125,6	42	60	146	84	98	9,0
1.3/4"-45	25,0	150	25,0	180	50	74	178	105	127	13,5
2"-50	35,0	210	35,0	250	57	88	197	114	138	19,0

Note: Grade 6, ANJA – Anchor shackle also available with Screw pin or Trawl pin

ANJA - Chain shackle with safety bolt

Standard: U.S. Fed Spec. RR-C-271

Finish: All parts hot dip galvanised

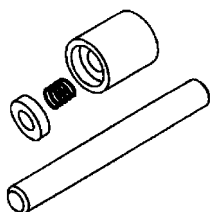


Nominal size D inches/mm	WLL=Working Load limit (t) MBL=Min. Breaking Load (t)		Bolt dia. D1	Inside with A	Inside length C	Inside bow E	Weight appr. (Kgs)
	Grade 6 WLL	Grade 8 MBL					
5/8"-16	3,25	19,5	19	27	51	40	0,6
3/4"-19	4,75	28,5	22	31	60	47	1,1
7/8"-22	6,5	39	25	37	71	50	1,5
1"-25	8,5	51	28	43	81	58	2,2
1.1/8"-28	9,5	57	32	46	90	64	3,1
1.1/4"-32	12,0	72	35	52	100	72	4,2
1.3/8"-35	13,5	81	38	57	111	74	5,6
1.1/2"-38	17,0	102	42	60	122	84	7,5
1.3/4"-45	25,0	150	50	74	149	105	13,0
2"-50	35,0	210	57	83	171	127	18,0

Note: Grade 6, ANJA – Chain shackle also available with Screw pin or Trawl pin

SKAF

Spare part kit for coupling link type GF

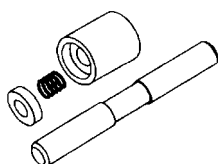


Designation	Weight (Kgs)
SKAF-10-8	0,05
SKAF-13-8	0,10
SKAF-16-8	0,20
SKAF-18/20-8	0,30
SKAF-22-8	0,40
SKAF-26-8	0,70
SKAF-32-8	1,10

Note: "SP" Stain proof, Chemical nickel plated load pin and stainless steel bush on special request.

SKA

Spare part kit for coupling link type G

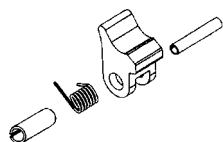


Designation	Weight (Kgs)
SKA-10-8	0,05
SKA-13-8	0,10
SKA-16-8	0,20
SKA-18/20-8	0,30
SKA-22-8	0,40
SKA-26-8	0,70
SKA-32-8	1,10

Note: "SP" Stain proof, Chemical nickel plated load pin and stainless steel bush on special request.

RDBK

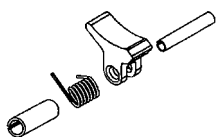
Spare part kit for safety hook type BK with stainless steel spring



Designation	Weight (Kgs)
RDBK-10-8	0,03
RDBK-13-8	0,05
RDBK-16-8	0,10
RDBK-18/20-8	0,20
RDBK-22-8	0,30

RDOBK

Spare part kit for safety hook type OBK with stainless steel spring



Designation	Weight (Kgs)
RDOBK-10-8	0,03
RDOBK-13-8	0,05
RDOBK-16-8	0,10
RDOBK-18/20-8	0,20
RDOBK-22-8	0,30

Gunnebo Industrier AB

P.O. Box 44

SE-730 60 Ramnäs, Sweden

Tel: +46 (0)220 384 00

Fax: +46 (0)220 384 98

E-mail: export@gunnebolifting.com

www.gunnebolifting.com

A company within the Gunnebo Group

