

Gunnebo Lifting Offshore programme - accessories



High consistent quality
generates long durability
and safety



GUNNEBO
LIFTING



DNV 2.7-1 certificate

We are certified by DNV to make type approval in 271 quality (Offshore quality in cold environments) for a range of offshore master links. The approval verifies that Gunnebo Lifting has a high consistent level of production stability in the entire process, from raw material to the finished product.



Oil & Gas / 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 new BKD safety hook with an extra latch secures a safe operation even when unexpected opening of the hook might occur. We have taken the aerospace industry as a role model; when the normal system fails, another is ready to save the situation. That is innovation with a purpose.

Our lifting systems have been valued for its long durability and quality. If the working environment has been cold or hot, our system has provided the lifting operation with high safety and functionality. Our quality system gives us the tools to work with continuous improvements and we will always put our efforts into the mission to create the best products available in the market. Our quality is there with a purpose.

The double latch BK-hook with a recessed trigger

Our latest development in the BK family is our new BKD. The hook has been developed to meet the stringent requirements and demands in the oil & gas and offshore industry. The working conditions and the environment on a platform is the toughest in the world and they can't risk a failure since that might harm the work engineers and in worst cases can jeopardise their lives. The innovative and patent pending solution is as simple as it is good. If there for any reason will be that the latch will accidentally become open, either by a direct hit on the trigger or that the trigger has been worn out, an extra latch will be there to keep the load in its place. The latch will not harm the operators during service but might save their lives if something happens. The investment for this special device is low, but the safety it provides is priceless. We are happy to announce that we have following sizes ready for the market and that others will follow during the coming year. BKD 13-10, BKD 16-10 and BKD 18/20-20.



"Patent pending"

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.

Type testing

In order to prove the design, material, heat treatment and method of manufacture, each size of component has been type tested in the finished condition in order to demonstrate that the component 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 condition of service is simulated.

- Charpy V test*)

To verify that the product can withstand its toughness in cold conditions a Charpy V test made on each production batch.

*) Only offshore products



Dimension control

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 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.

- Bending deflection

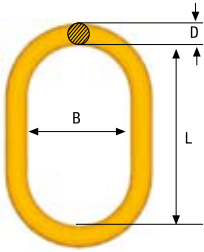
During manufacturing, of master links, samples are taken and the minimum bend deflection is verified.



Every single component is proof loaded and inspected



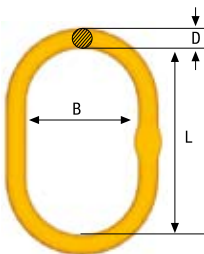
Master Link M



Code	WLL (tonnes)		L	Dim. in mm			Weight appr. kgs
	EN1677-4 β 0-45°*	ASTM A962 SF 5:1		B	D		
M-6-10	1.25	1.5	100	60	11	0.2	
M-86-10	2.5	3.2	120	70	14	0.4	
M-108-10	4	5.2	140	80	17	0.8	
M-13-10	5.4	5.6	150	90	19	1.0	
M-1310-10	7.5	8	160	95	22	1.5	
M-1613-10	10	13.6	190	110	25	2.3	
M-19-10	12	16	200	120	30	3.5	
M-2016-10	17	20.6	240	140	34	5.3	
M-2220-10	25	30.9	250	150	38	7	
M-2622-10	28	32	250	150	40	8	
M-32-10	33	38.6	300	180	45	12	
M-3226-10	43	46.6	300	200	50	15	
M-3632-10	56	65	350	200	55	21	
M-4536-10	70	72.7	375	210	60	26	
M-90T-10	90	100	450	250	70	43	
M-100T-10	100	100	450	260	80	57	
M-125T-10 **	125	125	450	260	80	57	



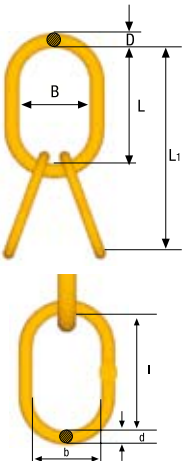
Master Link MF



Code	WLL (tonnes)		L	Dim. in mm			Weight appr. kgs
	EN1677-4 β 0-45°*	ASTM A962 SF 5:1		B	D		
MF-6-10 ***	1.25	1.5	100	60	11	0.2	
MF-86-10 ***	2.5	3.2	120	70	14	0.4	
MF-108-10 ***	4	5.2	140	80	17	0.7	
MF-1310-10 ***	7.5	8.0	160	95	22	1.5	
MF-1613-10 ***	10	13.6	190	110	25	2.2	
MF-2016-10 ***	17	20.6	240	140	34	5.2	
MF-2220-10 ***	25	30.9	250	150	38	7	



Master Link MT



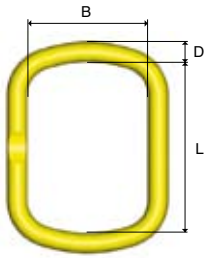
Code	WLL (tonnes)		L1	L	Dim. in mm						Weight appr. kgs
	EN1677-4 β 0-45°*	ASTM A952 SF 5:1			B	D	l	b	d		
MT-6-10 ***	3.5	5	270	150	90	19	120	70	14	1.8	
MT-8-10 ***	5.2	8	300	160	95	22	140	80	17	3.0	
MT-9-10	6.9	9.7	340	190	110	25	150	90	19	4.3	
MT-10-10 ***	11.5	16	360	200	120	30	160	95	22	6.5	
MT-13-10 ***	17	26	450	250	150	40	200	120	30	15	
MT-16-10 ***	28	35	500	300	200	50	200	120	32	23	
MT-20-10 ***	35	50	550	300	200	55	250	150	38	33	
MT-22-10	53	75	610	350	200	60	260	140	45	46	
MT-26-10	70	100	730	450	250	70	280	160	50	71	
MT-32-10	90	125	750	450	260	80	280	160	55	91	



*Safety factor 4:1

Master Link MFS

Designed for crane hooks, DIN 15401.

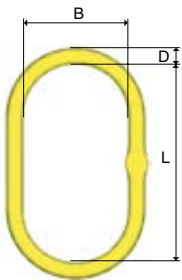


Code	WLL (tonnes)* β 0-45°	For chain size, mm			Dim. in mm			Weight appr. kgs
		1-leg	2-leg	3-4-leg	L	B	D	
MFS 1310-10	7.5	13	10	8	200	125	22	1.9
MFS 1613-10	10	16	13	10	220	135	25	2.7
MFS 2016-10	17	20	16	13	240	135	32	4.5
MFS 2220-10	28		20	16	250	175	38	7.6
MFSW-2220-10	25		20	16	320	225	38	9.5



Master Link, MFX

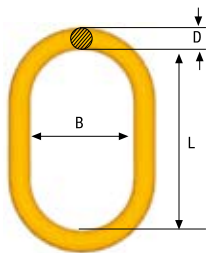
Oversized, for 1- and 2-leg sling.



Code	WLL (tonnes)* β 0-45°	For chain size mm,		L	Dim. in mm			Weight appr. kgs
		1-leg	2-leg		B	D		
MFX 108-10	4	8, 10	8	340	180	25	3.7	
MFX 1310-10	6.7	13	10	340	180	28	4.7	
MFX 1613-10	10	16	13	340	180	34	7.0	
MFX 2016-10	16	20	16	340	180	38	8.9	

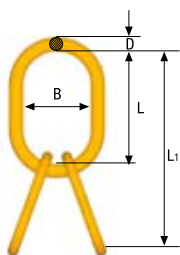


Master Link M /MT Offshore acc. to DNV 2.7-1

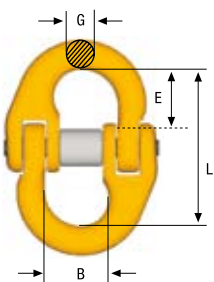


Code	WLL (tonnes)*	L	B	Dim. in mm			Weight appr. kgs	
				D	I	D		
M-13-10 OFFS	5.4	150	90	19			1.0	
M-1310-10 OFFS	7.8	160	95	22			1.5	
M-1613-10 OFFS	10.6	190	110	25			2.3	
M-281-10 OFFS	10.6	270	140	28			3.8	
M-19-10 OFFS	11.9	200	120	30			3.5	
M-321-10 OFFS	14.1	270	140	32			5.0	
M-381-10 OFFS	20.9	270	140	38			7.3	
M-32-10 OFFS**	33	300	180	45			12.0	
M-3226-10 OFFS**	44	300	200	50			15.0	
M-3632-10 OFFS**	55	350	200	55			21.0	
MT-9-10 OFFS	7.8	190	110	25	150	90	19	4.3
MT-281-10 OFFS	10.6	270	140	28	160	95	22	6.8
MT-321-10 OFFS	14.1	270	140	32	190	110	25	9.6
MT-381-10 OFFS	20.9	270	140	38	200	120	32	15.3
MT-20-10 OFFS**	33	300	200	55	250	150	38	33.0

**) Ready before the end of 2008



Coupling link G



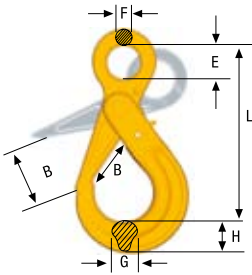
Code	WLL tonnes*	For chain size mm	L	Dim. in mm			Weight appr. kgs
				B	G	E	
G-6-8	1.12	6	44	15	8	16	0.1
G-7/8-8	2.0	7, 8	56	18	9	22	0.2
G-10-8	3.2	10	68	25	12	26	0.3
G-13-8	5.4	13	89	29	15	33	0.7
G-16-8	8.0	16	105	36	19	40	1.2
G-18/20-8	12.5	19	125	43	22	47	1.9
G-22-8	15.5	22	152	50	24	59	3.0
G-26-8	21.6	26	160	58	29	61	4.6
G-32-8	32.0	32	200	70	38	78	8.6



*Safety factor 4:1



Safety hook BK

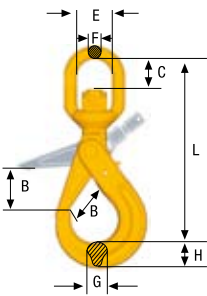


Code	WLL tonnes*	For chain size mm	Dim. in mm						Weight appr. kgs.
			L	B	E	F	G	H	
BK-6-10	1.5	6	109	29	22	10	15	21	0.5
BK-7/8-10	2.5	7, 8	137	37	28	11	17	25	0.9
BK-10-10	4	10	168	45	34	13	21	30	1.5
BK-13-10	6.7	13	207	54	44	16	30	39	2.8
BK-16-10	10	16	253	62	56	20	37	49	5.6
BK-18/20-10	16	19	290	68	60	22	44	64	8.3
BK-22-8	15.5	22	320	80	70	24	47	62	11.2
BK-26-8	21.6	26	345	100	80	25	50	68	14.5
BK-28-8	25	32	400	120	90	27	62	81	22.0

Size 6 - 18/20 with recessed trigger.



Swivel safety hook with ball bearing BCLK / BKL without ball-bearing

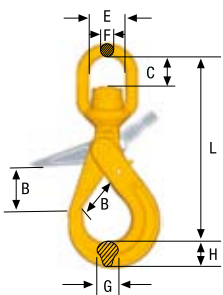


Code	WLL tonnes*	For chain size mm	Dim. in mm							Weight appr. kgs
			L	B	C1/C2**	E	F	G	H	
BCLK-6-10	1.5	6	149	29	24/23	33	11	15	21	0.7
BCLK-7/8-10	2.5	7, 8	183	37	27/27	38	12	17	25	1.2
BCLK-10-10	4	10	218	45	35/36	42	15	21	30	2.0
BCLK-13-10	6.7	13	280	54	45/47	48	19	30	39	3.8
BCLK-16-10	10	16	343	62	63/57	61	22	37	49	7.1
BCLK-18/20-10	16	19	367	69	59/70	74	26	44	64	11.1
BCLK-26-8	21.6	26	467	100	100	102	35	50	68	22.8

***) C1 = For BCLK hooks
C2 = For BKL hooks



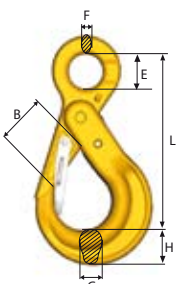
Swivel safety hook with ball bearing BCLK acc. to DNV Lifting Appliances



Code	WLL		Dim. in mm							Weight appr. kgs
	tonnes 4:1	tonnes 5:1	L	B	C	E	F	G	H	
BCLK-13-8 W	5.4	4.3	307	55	72	61	22	30	39	4.6
BCLK-16-8 W	8	8	366	62	88	82	26	37	49	8.3
BCLK-18/20	12.5	10	368	69	59	74	26	42	56	13.1
BCLK-26-8	21.6	17	467	100	100	102	35	50	68	22.8



Safety hook with double latch BKD*



Code	WLL tonnes*	For chain size mm	Dim. in mm						Weight appr. kgs
			L	B	E	F	G	H	
BKD-13-10	6.7	13	207	44	44	16	30	39	4.6
BKD-16-10	10	16	253	48	56	20	37	49	6.0
BKD-18/20-10	16	19	290	57	60	22	42	63	8.7

* Patent pending



*Safety factor 4:1

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 utmost importance that this information is known to the user, and in accordance with the Machinery Directive 98/37/EC this information must be delivered to the customer.

Extreme temperature conditions

The in service temperature of the G8 and G10 components affects the WLL as follows.

Temp. of sling (°C)	Reduction of WLL
-40 to 200	None
+200 to 300	10%
+300 to 400	25%

Upon return to normal temperature, the sling reverts to its full capacity within the above temperature range. Slings should not be used above or below these temperatures.

Surface treatment

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

Asymmetric loading conditions

For unequally loaded 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.)
- Stricter local standards should always be followed.

Severe environment

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.

General advice

- Ensure that the sling is precisely as ordered
- Ensure that the manufacturer's certificate is in order.
- Ensure that the identification and the WLL on the ID-tag correspond to the information on the certificate. (The following ID-tag information is compulsory: WLL, Number of 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 sling has received the appropriate information and training.

Protect yourself and others

- Before each use the 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 go under a suspended load.
- Take into consideration that the load may swing or rotate
- Watch your feet and fingers while loading / unloading.

Assembly:

G-link assembly:

1. Join the link halves
2. Place the retaining bush between them.
3. Insert the load pin and ensure that the load pin snaps into place.



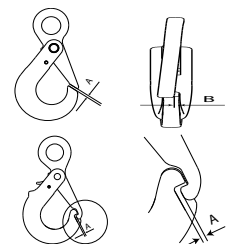
Maintenance

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 slings must be taken out of service.
2. Components incl. load pins which has been damaged, deformed, elongated, bent or showing signs of cracks or gauges shall be replaced. Grind of small sharp cuts and burrs. Additional testing by magnetic particle inspection and/or proof loading at max. 2 x WLL may be carried out.
3. Check the function of latches, triggers and retaining pins / bushes, replace when necessary. Always use Gunnebo Lifting original spare parts.
4. Max. clearance between hook and latch.

Note: For a Griplatch hook measure the difference between measure A with unloaded spring and measure 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
28	7	13



5. The wear of the component shall in no place exceed 10% of the original dimensions.

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