

Shackles

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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.

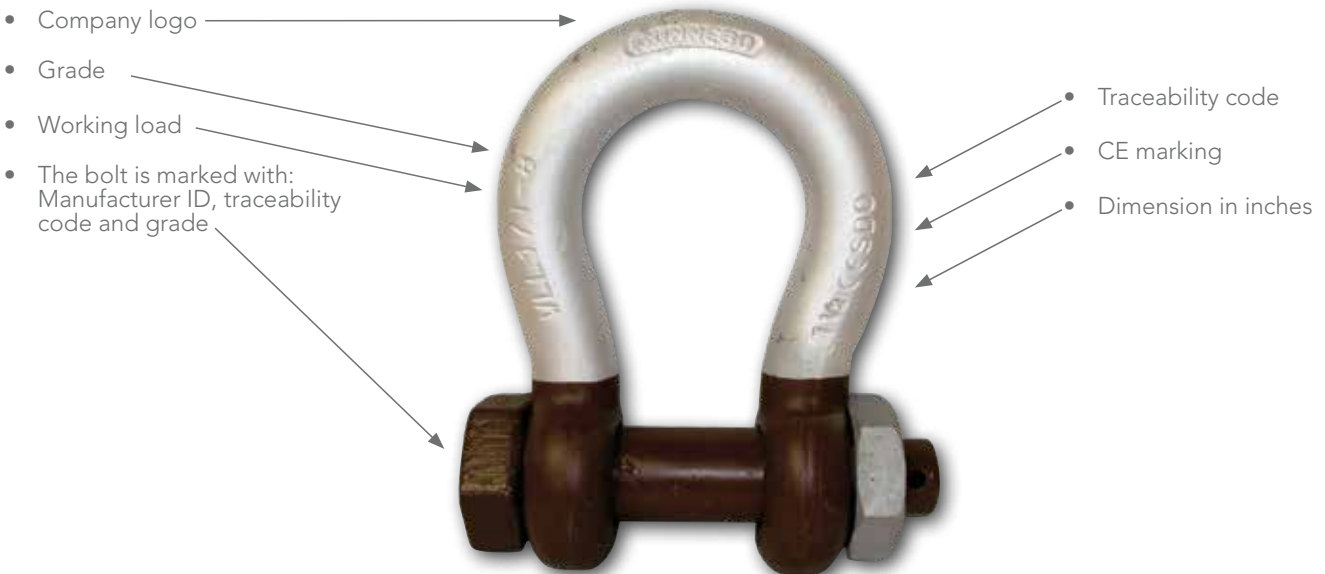
We offer a range of DNV 2.7-1 Type approved lifting shackles for offshore containers, developed for the tough conditions of the offshore industry, where safety must be of the highest priority at all times. The heat treatment of these products ensures the proper ductility and strength to sustain shock 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 according to 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:

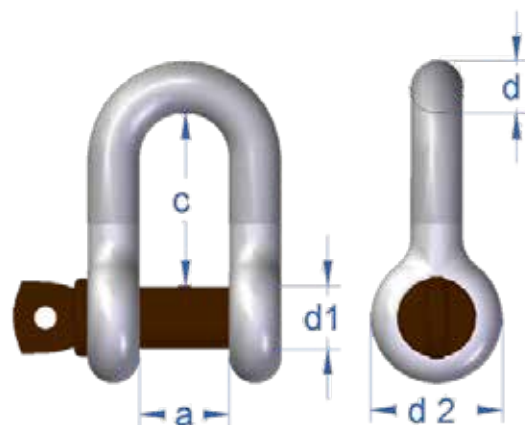


Dee Shackle No 834

Standard: 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 according to EN 10204 - 3.1
 Temperature: -20°C to 200°C



Art. no. Screw pin	WLL tonnes 6:1	Dim. d1	d Trade size		Inner width a*	Inner length c*	Eye outer d2	Screw pin kg
			mm	inch				
A083416	3.25	19	16	5/8"	27	51	40	0.55
A083419	4.75	22	19	3/4"	31	60	48	1.00
A083422	6.5	25	22	7/8"	37	71	52	1.30
A083425	8.5	28	25	1"	43	81	60	1.90
A083428	9.5	32	28	1 1/8"	46	90	64	2.80
A083432	12.0	35	32	1 1/4"	52	100	72	3.60
A083435	13.5	38	35	1 3/8"	57	111	76	4.60
A083438	17.0	42	38	1 1/2"	60	122	84	6.50
A083445	25.0	50	45	1 3/4"	74	149	105	11.50



Shackle No 834 with screw pin

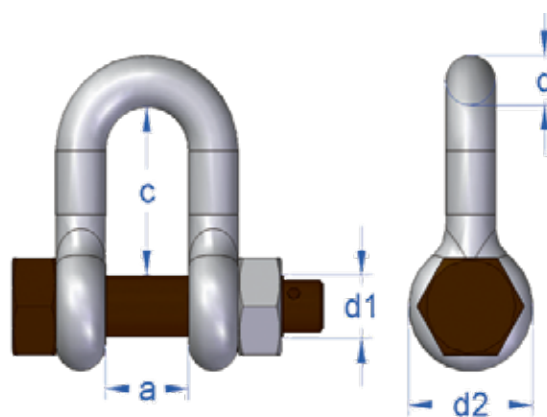
* Forging tolerance: +/- 5% on inside width/length.

Dee Shackle 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 according to EN 10204 - 3.1. DNV 2.7-1 and DNV 2.7-3 Type Approval Certification.
 Temperature: -20°C to 200°C



Art. no. Safety bolt	WLL tonnes 6:1	Dim. d1	d Trade size		Inner width a*	Inner length c*	Eye outer d2	Safety bolt kg
			mm	inch				
A083516	3.25	19	16	5/8"	27	51	40	0.60
A083519	4.75	22	19	3/4"	31	60	48	1.10
A083522	6.5	25	22	7/8"	37	71	52	1.50
A083525	8.5	28	25	1"	43	81	60	2.20
A083528	9.5	32	28	1 1/8"	46	90	64	3.10
A083532	12.0	35	32	1 1/4"	52	100	72	4.20
A083535	13.5	38	35	1 3/8"	57	111	76	5.60
A083538	17.0	42	38	1 1/2"	60	122	84	7.50
A083545	25.0	50	45	1 3/4"	74	149	105	13.00

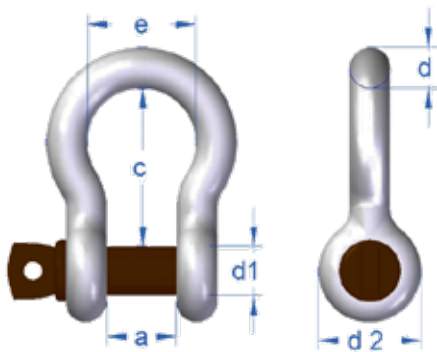


Shackle No 835 with safety bolt

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

Bow Shackle No 854

Standard: 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 according to EN-10204 - 3.1.
 Temperature: -20°C to 200°C



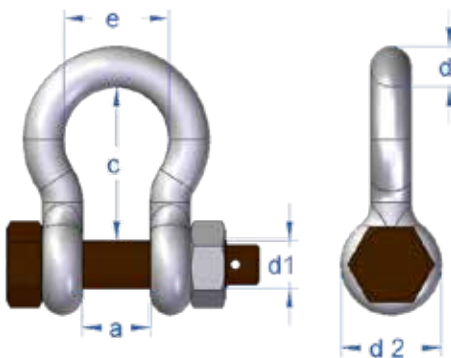
Shackle No 854 with screw pin

Art. no. Screw pin	WLL tonnes 6:1	Dim. d1	d Trade size		inner width a*	inner length c*	Bow width e	Eye outer d2	Screw pin kg
			mm	inch					
A085413	2.0	16	13	1/2"	21	47	33	33	0.37
A085416	3.25	19	16	5/8"	27	60	42	40	0.65
A085419	4.75	22	19	3/4"	31	71	49	48	1.10
A085422	6.5	25	22	7/8"	37	84	60	52	1.50
A085425	8.5	28	25	1"	43	95	68	60	2.21
A085428	9.5	32	28	1 1/8"	46	108	74	64	3.10
A085432	12.0	35	32	1 1/4"	52	119	83	72	4.20
A085435	13.5	38	35	1 3/8"	57	132	89	76	6.00
A085438	17.0	42	38	1 1/2"	60	146	98	84	8.00
A085445	25.0	50	45	1 3/4"	74	178	127	105	13.50
A085452	35.0	57	50	2"	83	197	138	112	19.00
A085464	55.0	70	65	2 1/2"	105	260	180	145	38.00

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

Bow Shackle 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 according to EN-10204 -3.1. DNV 2.7-1 and DNV 2.7-3 Type Approval
 Temperature: -20°C to 200°C



Shackle No 855 with safety bolt

Art. no. Safety bolt	WLL tonnes 6:1	Dim. d1	d Trade size		inner width a*	inner length c*	Bow width e	Eye outer d2	Safety bolt kg
			mm	inch					
A085513	2.0	16	13	1/2"	21	47	33	33	0.42
A085516	3.25	19	16	5/8"	27	60	42	40	0.70
A085519	4.75	22	19	3/4"	31	71	49	48	1.20
A085522	6.5	25	22	7/8"	37	84	60	52	1.70
A085525	8.5	28	25	1"	43	95	68	60	2.58
A085528	9.5	32	28	1 1/8"	46	108	74	64	3.40
A085532	12.0	35	32	1 1/4"	52	119	83	72	4.80
A085535	13.5	38	35	1 3/8"	57	132	89	76	7.00
A085538	17.0	42	38	1 1/2"	60	146	98	84	9.00
A085545	25.0	50	45	1 3/4"	74	178	127	105	15.00
A085552	35.0	57	50	2"	83	197	138	112	21.00
A085564	55.0	70	65	2 1/2"	105	260	180	145	39.00

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

Split pin included

Arctic Shackle No 856

Bow shackle with safety bolt

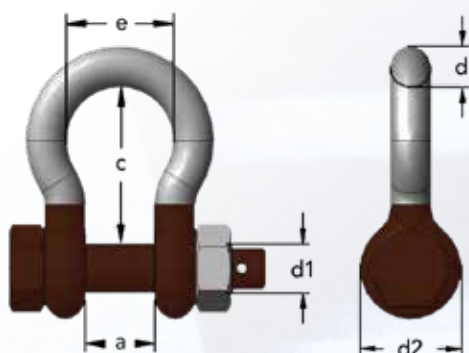
Unique benefits with the Arctic Shackle

Adverse weather and rough sea conditions in combination with extremely low temperatures, as often encountered for instance in the North Sea, 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 °C.

The Arctic Shackle is a grade 8 shackle with all parts hot dipped galvanized, including the safety bolt, and has the characteristic brown color 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 color marking
- Safety factor: As specified in the table below
- Documentation: Test certificate and traceable raw material / inspection certificate according to EN 10204 - 3.1 DNV 2.7-1 and DNV 2.7-3 Type Approval Certification.
- Temperature: - 40 °C to 200 °C



Art. no.	WLL tonnes	Dim. d1	d Trade size		a	c	d 2	e	Weight kg	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	48	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	76	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	116	138	21	6.00
A085664	55.0	70	65	2 1/2"	105	260	145	180	39	6.00



Split pin included

Super Shackle No 858

Bow shackle with safety bolt

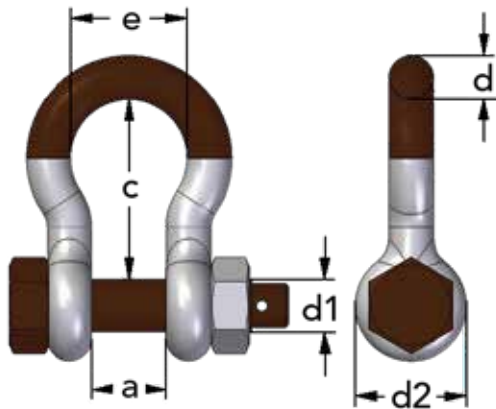
Unique benefits with the Super Shackle

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 color marking
- Safety factor: 5:1
- Documentation: Test certificate and traceable 3.1 certificate
- Temperature: -20 °C to 200 °C



Art.no	WLL tonnes	Dim. d1	d Trade size		a	c	d2	e	Weight kg
			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	48	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	76	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

Split pin included

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 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 according to ISO 9001
- Approved according to ISO 14001
- Product certification according to 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).

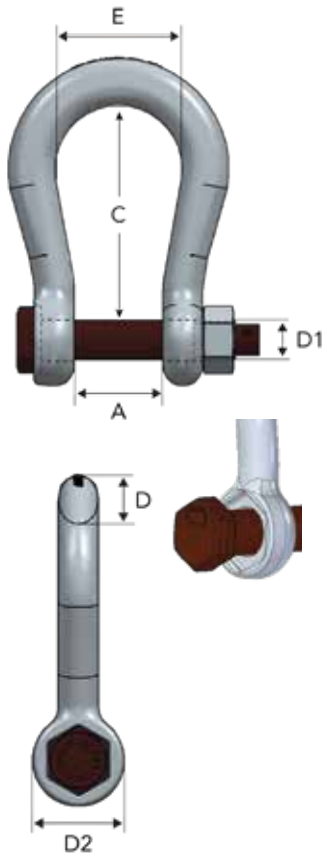
The shackle has a spacious bow for connecting thimbles, rope and mooring/connecting plates.

Standard: Third party approved according to relevant Norwegian aquaculture standards

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

Finish: All parts hot dip galvanized + brown color 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

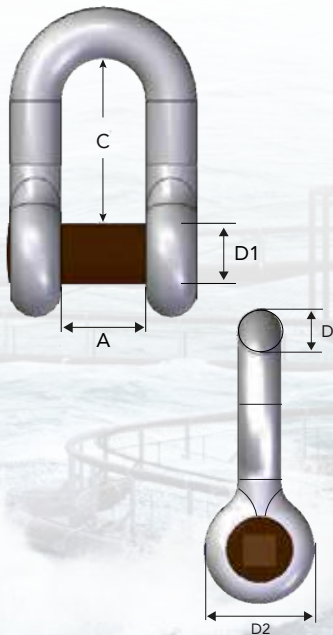
- Clips (28T to 40T) - Yellow
- Clips (60T to 90T) - Green
- Plastic covered seizing wire
- Plastic covered steel wire
- Stainless steel cotter pin

Countersunk Shackle No 830

Standard: Third party approved according to relevant Norwegian aquaculture standards

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

Finish: All parts hot dip galvanized + brown color marking



Art.no	Art.no*	WLL tonnes	Dim. D		A	C	D1	D2	Square hole	Recommending Key
			mm	inch						
A083013	A083013DP	2.0	13	1/2"	21	41	16	33	10x10	3/8"
A083016	A083016DP	3.25	16	5/8"	27	51	19	40	10x10	3/8"
A083019	A083019DP	4.75	19	3/4"	31	60	22	48	10x10	3/8"
A083022	A083022DP	6.5	22	7/8"	37	71	25	52	14x14	1/2"
A083025	A083025DP	8.5	25	1"	43	81	28	60	14x14	1/2"

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

Long link Chain LLZ - see chapter 5



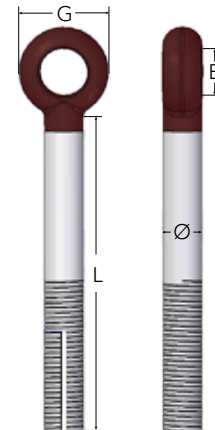
Mooring bolt - Eye Bolt No 8250

Standard: Third party approved according to relevant Norwegian aquaculture standards

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

Finish: All parts hot dip galvanized + brown color 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



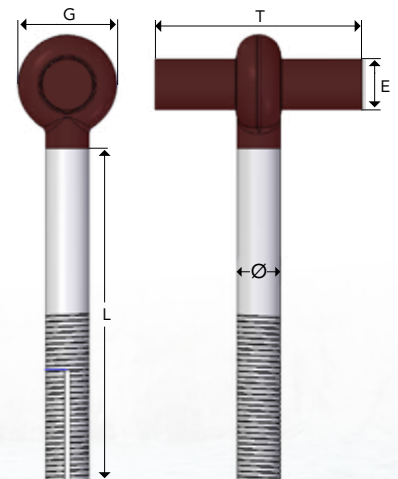
Mooring bolt - T-bolt No 8252

Standard: Third party approved according to relevant Norwegian aquaculture standards

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

Finish: All parts hot dip galvanized + brown color marking

Art.no	MBL tonnes	Dim Ø x L	G	E	T
A825232	40	Ø32 x 400	72	35	300
A825238	60	Ø38 x 500	84	42	350
A825445	80	Ø45x500	105	45	400
A825245	80	Ø45 x 600	105	45	400
A825450	100	Ø50x500	100	45	400
A825250	100	Ø50 x 700	110	45	400
A825265	170	Ø65 x 800	140	58	400



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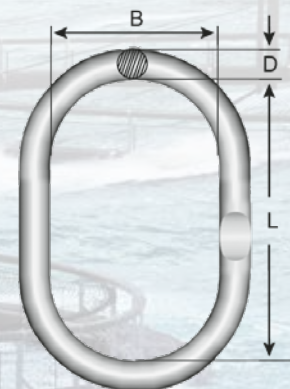
Galvanized Master Link

Standard: Third party approved according to relevant Norwegian aquaculture standards

Material: High Tensile Steel. Quenched and Tempered, Grade 7

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

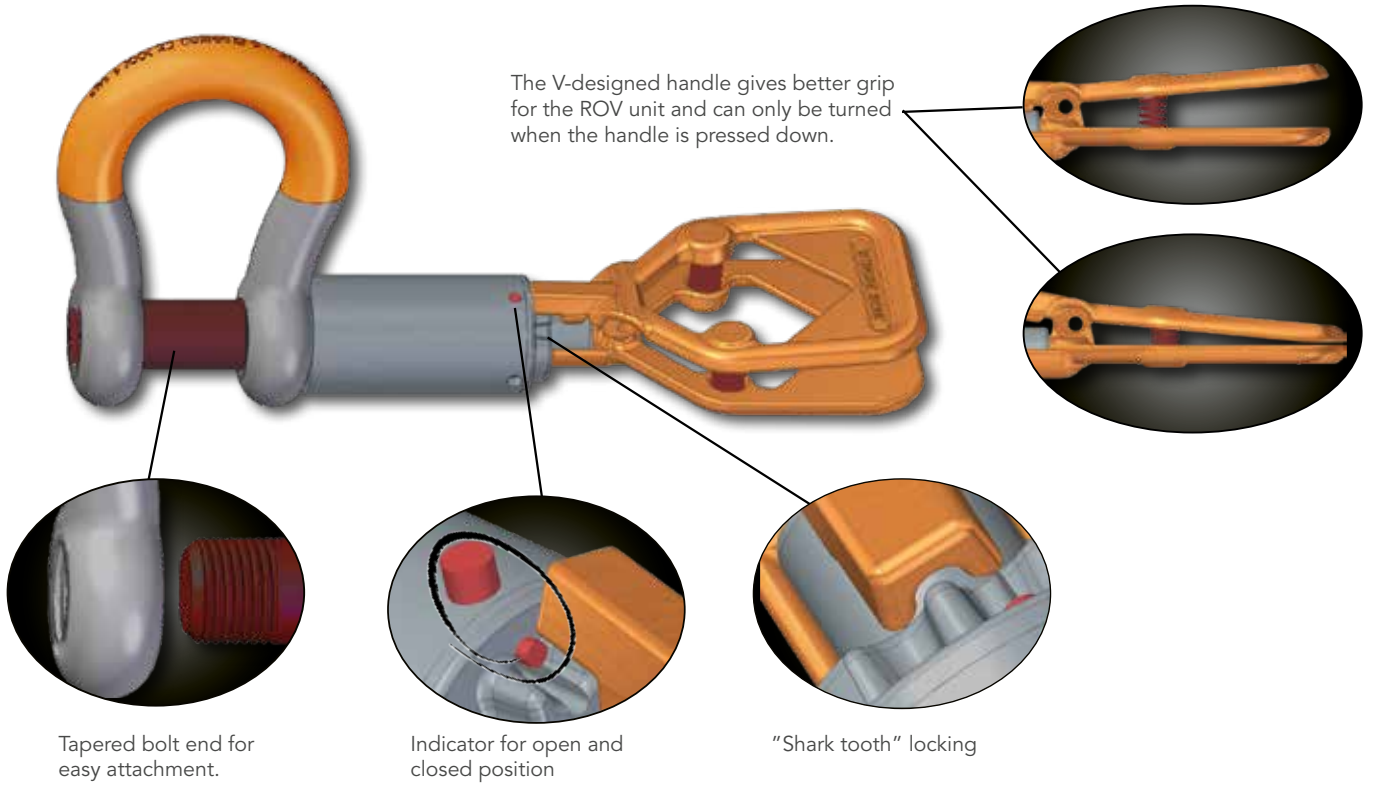


ROV Shackles

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.

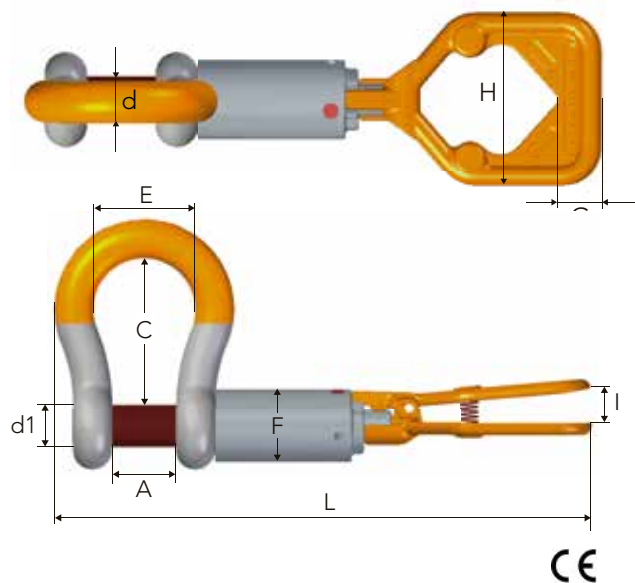
The ROV Retrieve Shackle no. 861 is an easy to operate shackle, saving valuable time and money.



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 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
A086128	9.5	32	28	46	108	74	60	440	31	132	33	6.5
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	260	180	88	712	31	132	33	42.0

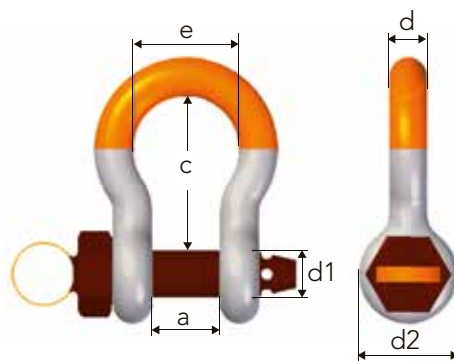
ROV Shackle No 860

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 supplied on request.
Temperature:	-40 °C to 200 °C



Art. no.	WLL tonnes	d1	d	a	c	d2	e	Weight kg
A086028	9.5	32	28	46	108	64	68	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	260	152	180	37.0



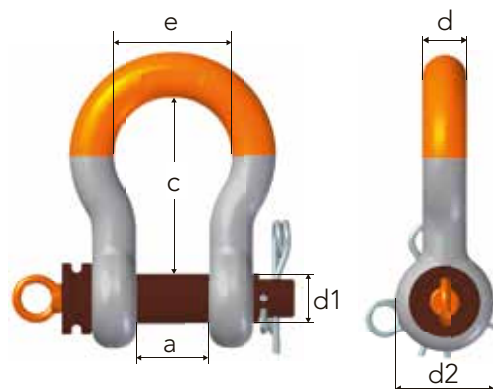
ROV Release Shackle No 863

Equipped with bolt and two 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 supplied on request.
Temperature:	-40 °C to 200 °C



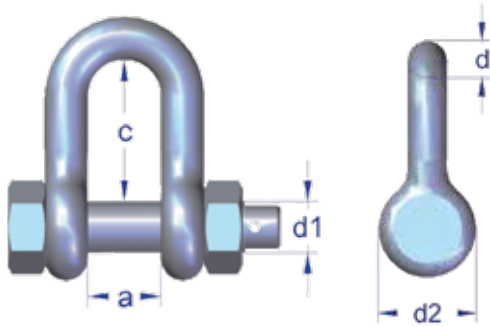
Art. no.	WLL tonnes	d1	d	a	c	d2	e	Weight kg
A086322	6.5	25	22	37	84	52	58	1.6
A086328	9.5	32	28	46	108	64	74	3.4
A086332	12.0	35	32	52	119	72	83	5.0
A086338	17.0	42	38	60	146	84	98	7.8
A086345	25.0	50	45	74	178	105	127	13.9
A086352	35.0	57	50	83	197	127	138	17.0
A086364	55.0	70	65	105	260	152	180	37.0



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 supplied on request.



CE

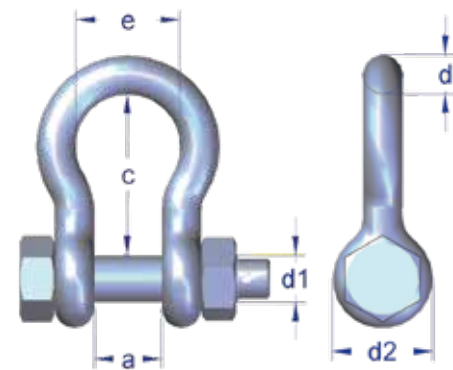
Art. no.	WLL tonnes	d1	d	a	c	d2	Weight kg
A073510	0.6	10	10	20	38	20	0.2
A073512	0.9	12	12	26	50	24	0.3
A073516	1.5	16	13	24	52	33	0.4
A073520	2.5	19	16	28	65	40	0.7
A073522	3.0	22	19	31	60	48	1.5
A073524	4.5	25	22	37	71	52	1.3
A073533	7.5	32	28	46	90	64	3.0
A073536	10.0	35	32	52	100	72	4.1

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 supplied on request.



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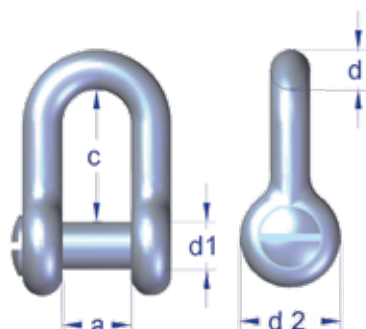
Art. no.	WLL tonnes	d1	d	a	c	e	d2	Weight kg
A075510	0.6	10	10	20	36	27	20	0.2
A075512	0.9	12	12	25	47	37	26	0.3
A075516	1.5	16	13	25	47	33	34	0.4
A075520	2.5	20	16	28	60	42	40	0.8
A075522	3.0	22	19	31	71	51	48	1.3
A075524	4.5	25	22	37	84	58	52	1.7
A075533	7.5	32	28	46	108	74	64	3.4
A075536	10.0	35	32	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 supplied on request.



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Art. No.	WLL tonnes	Dim. d1 mm	d1	d	a	(c)	d2	Weight kg
A073216	2.0	M16	16	13	24	52	34	0.3
A073220	3.0	M20	20	16	28	65	40	0.6
A073222	3.0	M22	22	19	31	60	48	1.4

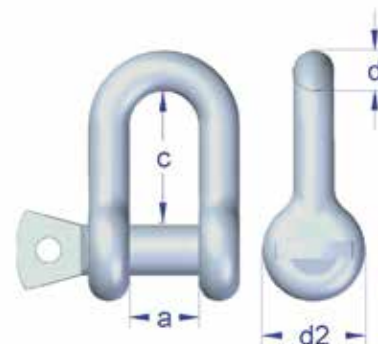
Stainless Steel Shackle No 730

Dee shackle with screw pin

Material: AISI 316
 Finish: Highly Polished
 Safety factor: 6:1
 Documentation: Test certificate supplied on request.



Art. no.	WLL tonnes	Dim. d1 mm	d	a	c	d2	Weight kg
A073008S	0.4	M8	8	16	30	16	0.06
A073010S	0.6	M10	10	20	38	20	0.1
A073012S	0.9	M12	12	26	50	24	0.2
A073016S	1.5	M16	13	24	52	34	0.3
A073020S	2.5	M20	16	28	65	40	0.6
A073022S	3.0	M22	19	30	72	48	0.9



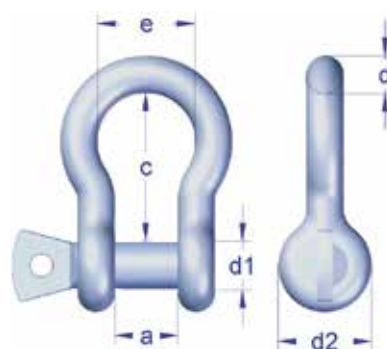
Stainless Steel Shackle No 750

Bow shackle with screw pin

Material: AISI 316
 Finish: Highly Polished
 Safety factor: 6:1
 Documentation: Test certificate supplied on request.



Art. no.	WLL tonnes	Dim. d1 mm	d1	d	a	c	e	d2	Weight kg
A075008S	0.4	M8	8.0	8	16	30	23	16	0.07
A075010S	0.6	M10	10.0	10	20	36	27	20	0.11
A075012S	0.9	M12	12.0	12	25	47	37	26	0.25
A075016S	1.5	M16	13.0	13	25	47	34	33	0.33
A075020S	2.5	M20	16.0	16	28	60	42	40	0.96
A075022S	3.0	M22	19.0	19	31	71	51	48	1.0



4

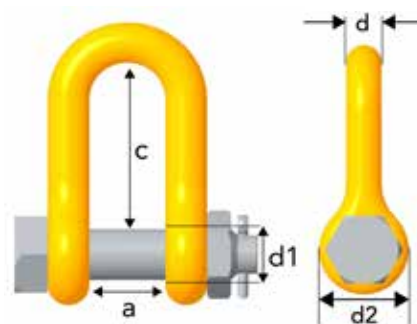
Shackle SA

EN 1677-1

Finish: Painted yellow
 Material: Alloy steel, Grade 8
 Safety factor: 4:1



Art. no.	Code	WLL tonnes	For chain dim. mm	c	a	d	d2	d1	Weight kg 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	34	M16	0.4
Z292528	SA-13-8	5.4	13	65	28	16	40	M20	0.7
Z293024	SA-16-8	8.2	16	72	30	18	46	M22	1
Z299622	SA-19-8	11.5	19	86	36	22	52	M27	1.7
Z294122	SA-22-8	15.5	22	94	40	25	60	M30	2.5
Z304328	SA-26-8	21.7	26	116	48	32	76	M38	5.2



Split pin included

Alloy Steel Rigging Screw, No 801, 802, 804

Grade 6

Standard: Working load according 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

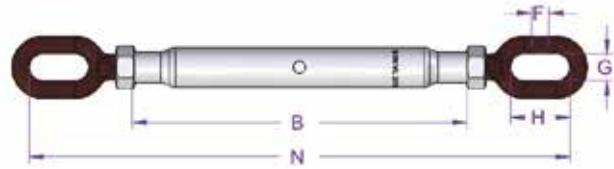
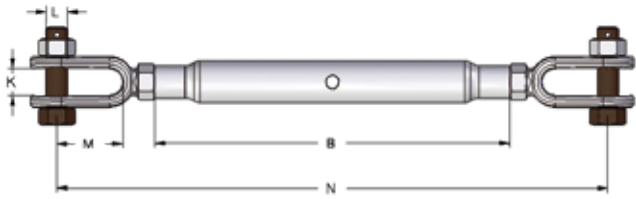
Surface treatment: Hot dip galvanized

Safety factor: 5:1

Certificate: Test certificate and traceable 3.1 certificate supplied on request.

Tolerances: +/- 5%

Temperature: -20 °C to 200 °C



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 kg/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	400	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, 404 - Hot Dip Galvanized

Design: Jaw-Jaw (jaw-eye and eye-eye on request)

Standard: According to B.S. 4429, closed body - with locking nut

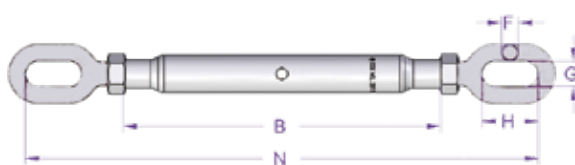
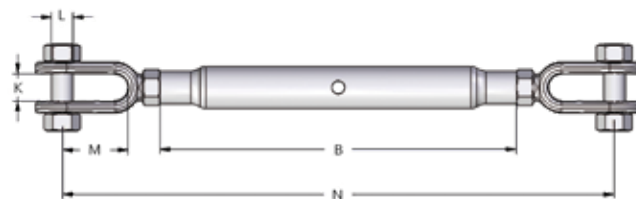
Material: St. 42/St. 52, normalized

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	145	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

* Will not be delivered with lifting certificate.

Technical information

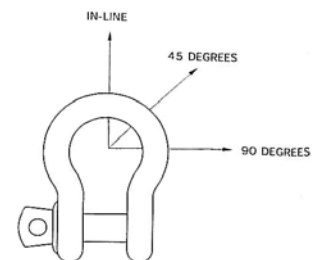
2006/42/EC highlights the responsibility of the manufacturer, distributor and end user of lifting gear. Gunnebo Industries shackles are specified, monitored and documented in compliance with the most stringent requirements for the product concerned. A certified ISO 9001:2008 system is an evidence of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

Reduction for side loading

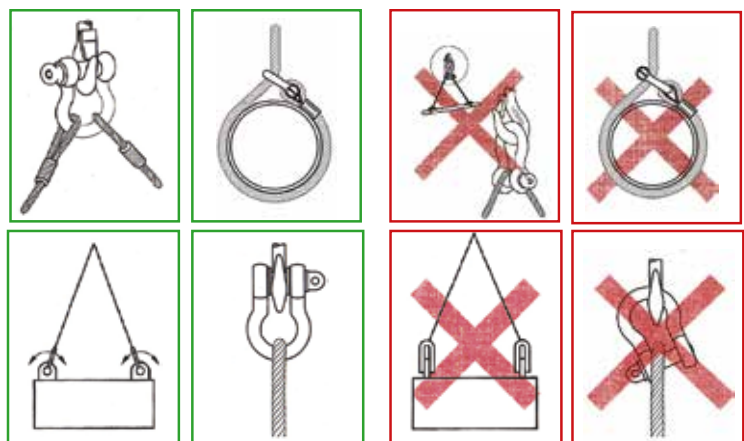
Load angle	New Working Load Limit
0°	100% of original WLL
45°	70% of original WLL
90°	50% of original WLL



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:

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

Shackle must be loaded in straight direction



Temperature

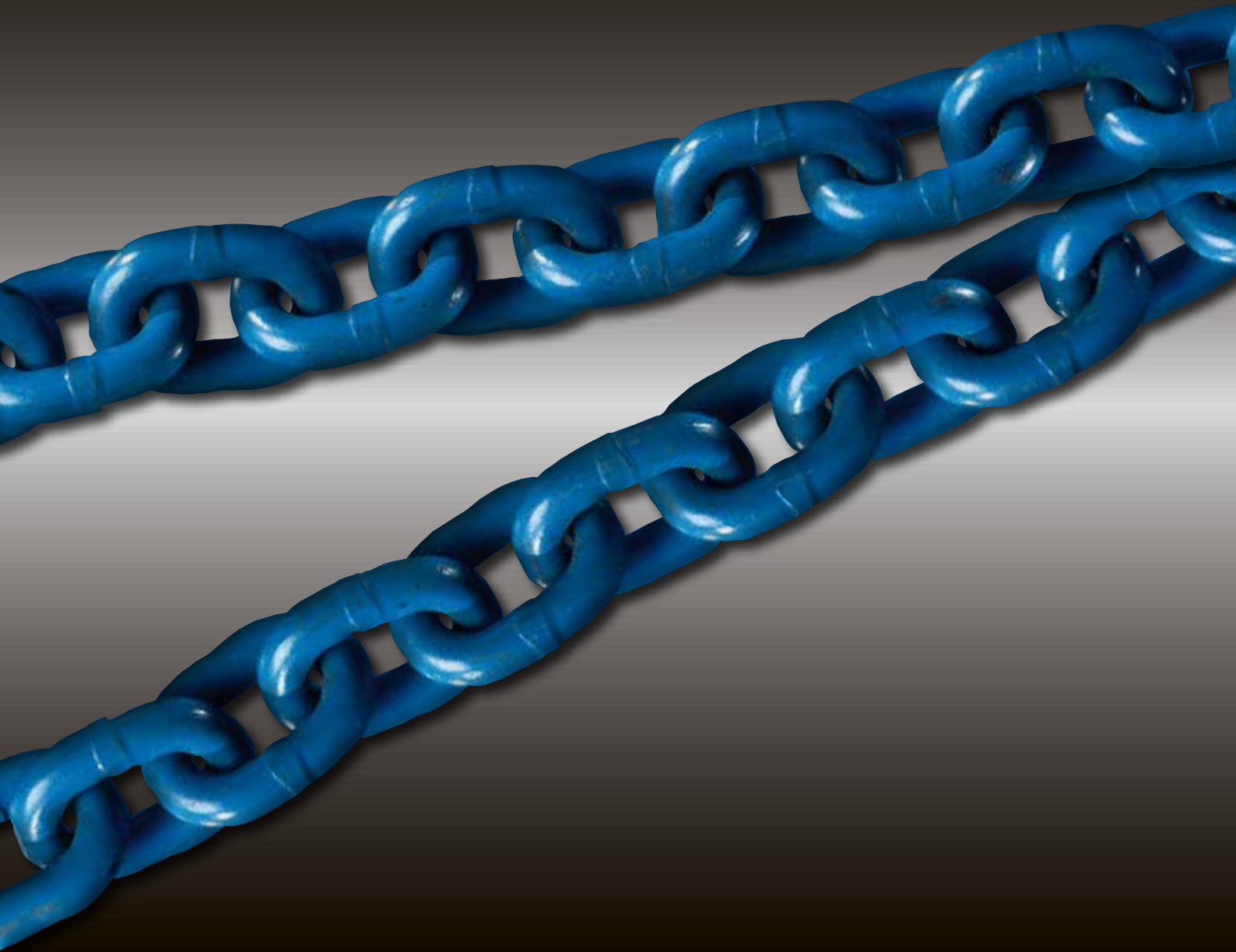
If extreme temperature situations are applicable, the following load reductions must be taken into account.

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



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