FISHING & AQUACULTURE



Applications

Green Pin® Fishing shackles are used for easy and efficient connection of fishing components. Green Pin® aquaculture products are used for aqua-culture applications and are suitable for extreme marine conditions. The cages need to be secured reliably for long periods to safeguard the investment. That's why cages need mooring equipment which is above standard.

Range

Green Pin® offers a wide range of fishing and aquaculture products for a variety of applications. The range stretches from WLL 2 t to 25 t and MBL 30 t up to 170 t. This provides our customers with a very extensive range to choose products that suit their application best. Check out the complete range of fishing and aquaculture products at **www.greenpin.com/aquaculture**.

Design

Green Pin® offers four types of fishing shackles and five types of aquaculture products.
All fishing shackles are in compliance with EN 13889.

These products are generally marked with:

- Working Load Limit / Minimum Breaking Load - e.g. WLL 25 T or MBL 40 T
- manufacturer's symbol - GP
- traceability code - e.g. HA
- steel grade - e.g. 8
- CE conformity code (Conformité Européenne) - e.g. CE
- Origin - e.g. Holland

Finish

Green Pin® fishing shackles are painted or hot dipped galvanized.
The Green Pin® aquaculture products are completely hot dipped galvanized.

Certification

Specific details of certificate availability can be found on each product page.
Please verify your certification requirements at the time of order. All aquaculture products are certified by DNV in compliance with NYTEK regulation and NS 9415. The aquaculture approval certificates provided by DNV can be found at **www.greenpin.com**.

Instructions for use

For general (assembly) instructions about shackles we refer to chapter 1, and for master links to chapter 3. For the mooring bolt, please find the specific instructions below.

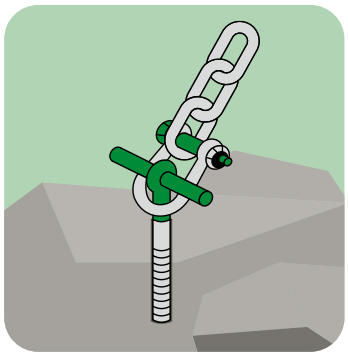
Fishing and aquaculture products must be regularly inspected in accordance with the safety standards and regulations given in the country of use. This is required because the products in use may be affected by deteriorating conditions such as wear, misuse and overloading, which may lead to deformation and alteration of the material structure. Inspection should take place at least every six months (follow the local rules in the country of use), and more frequently when the links are used in severe operating conditions.

Installation of the Green Pin® Mooring Bolt

Green Pin® Mooring Bolt NS9415 T must be installed by the use of two-component grouting. The advised grouting to be used is Fosroc® Lokfix S25 or equivalent. Before installation of the Green Pin® Mooring Bolt NS9415, always consult the installation manual of the used grouting and respect the instructions.

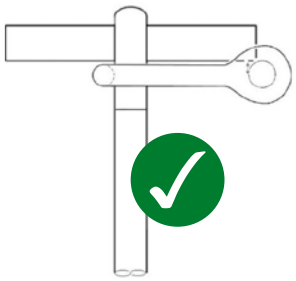
For instructions on how to machine the hole and the application and hardening time of the grouting, please always consult the installation manual of the grouting supplier first. The mounting depth is indicated by the green colour. Install the Mooring Bolt NS9415 T until the green-coloured part is reached.
The green-coloured part may not enter the hole.

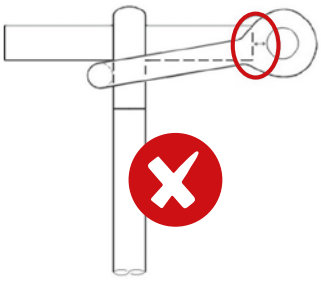




Assembly of Green Pin® Shackles to Green Pin® Mooring Bolts

Ensure that the inside length of the chosen shackle is minimized so that the shackle cannot be (dis)assembled from/to the Mooring bolt without disassembling the shackle pin.

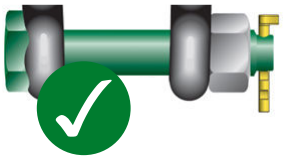


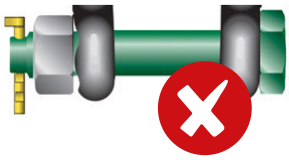


In any case; Shackles and mooring bolts that are connected to each other shall have dimensions that are adapted to each other, in order to prevent any increase in the risk of damage and fish escape.

Assembly of Green Pin® Mooring Shackles

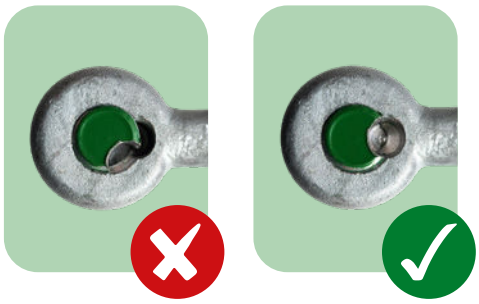
Green Pin® Mooring Shackle is equipped with a chamber in which the pinhead will fit. During assembling the pinhead will block in the chamber which facilitates easier assembling. Please note that it is not allowed to fit the nut into this chamber.



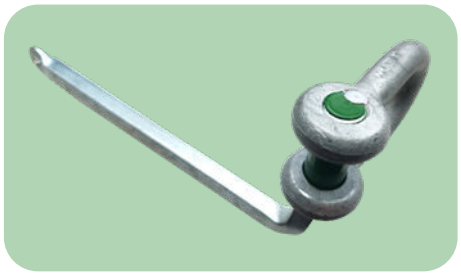


Assembly of Green Pin® Safety Plug

Please also consult chapter 1: shackles for general user instructions on the screw pin shackles, including the Green Pin® Dee Shackle NS9415 FP.



1. Assemble the shackle pin and secure it hand tight;



2. When a misalignment of the drilled hole can be seen, fasten the pin further using the Green Pin® Sunken hole key until the drilled hole is aligned;



3. Insert the Green Pin® safety plug, with the blind side first, using a small nylon hammer; Make sure that the safety plug is completely inserted into the drilled hole.

Disassembly of Green Pin® Safety Plug

There are two ways in which the safety plug can be disassembled:



1. Using a screw and cordless drill

Use force to break the plug screw the 4 x 25 mm screw into the centre hole of the safety plug till you reach the (steel) bottom of the drilled hole. By continuing the screwing, the rotating effect will force the plug to come out of the hole automatically;



2. Use force to break the plug

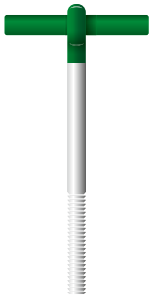
Use the square key to break the plug. If needed, a cheater pipe can be used to increase the force on the plug.

Green Pin® Mooring Bolt NS9415 T

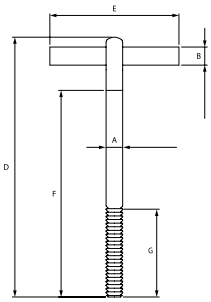
Bolt with T-shaped end-fitting

Scan for additional product details

- **Material:** high tensile steel, grade 8, quenched and tempered
- **Standard:** NYTEK regulation and NS 9415
- **Finish:** hot dipped galvanized
- **Temperature Range:** -20 °C up to +200 °C
- **Certification:** 2.1 2.2 3.1 MTC [a] CE IIA DNV NS 9415
- **Article code:** scan QR code to see article codes



G-8310





minimum breaking load	diameter bolt	diameter crossing bar	diameter eye	length	width	mounting depth	length mounting thread	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	kg
40	32	35	73	503	250	400	170	5.16
60	38	42	88	628	300	500	210	9.06
80	45	50	104	744	400	600	300	15.6
100	50	57	112	774	400	600	300	20
130	57	57	119	779	400	600	300	23.7
170	65	57	140	900	400	700	350	32.8

CAD INFO

CERTIFIED PRODUCT DNV NYTEK NS 9415

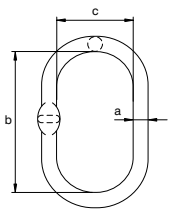
Green Pin® Master Link NS9415 GR8

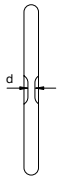
Grade 8 master link acc. to NS 9415

Scan for additional product details



G-6870





- **Material:** alloy steel, grade 8
- **Standard:** EN 1677-4 and NYTEK regulation and NS 9415
- **Finish:** hot dipped galvanized
- **Temperature range:** -40 °C up to +200 °C
- **Certification:** 2.1 2.2 3.1 MTC [b] MPI [a] DNV NS 9415
- **Article code:** scan QR code to see article codes

minimum breaking load	diameter	length inside	width inside	weight each
t	a mm	b mm	c mm	kg
32.8	22	170	90	1.60
51.5	28	209	113.5	3.20
68.3	32	270	140	5.30
112.4	38	270	140	7.80

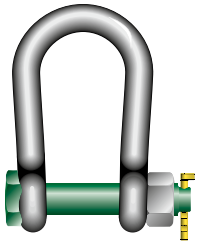
CAD INFO

CERTIFIED PRODUCT DNV NYTEK NS 9415

Green Pin® Mooring Bow Shackle NS9415 BN

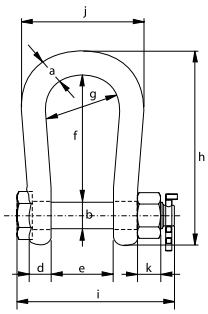
Scan for additional product details

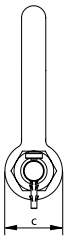
Grade 8 mooring bow shackle with safety bolt and sunken bolt head



G-4863

- **Material:** bow and pin alloy steel, grade 8, quenched and tempered
- **Standard:** NYTEK regulation and NS 9415
- **Finish:** hot dipped galvanized
- **Temperature Range:** -20 °C up to +200 °C
- **Certification:** 2.1 2.2 3.1 MTC [a] CE IIA DNV NS 9415
- **Article code:** scan QR code to see article codes
- **Note:** the synthetic cotter pin is available for sizes MBL 30 t up to 90 t and must be ordered separately



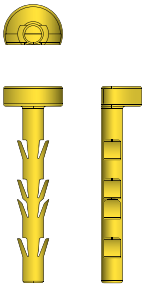


minimum breaking load	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	width bow	length	length bolt	width	thickness nut	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	j mm	k mm	kg
30	19	22	48	19	44	100	58	154	125	96	19	1.34
40	22	25	54	22	52	125	68	187	142	112	22	2.08
60	28	32	66	28	62	150	89	227	178	145	27	4.07
90	32	35	76	32	82	170	98	258	207	162	30	5.95
110	42	45	90	42	112	200	150	310	261	234	25	14.7
150	45	50	105	45	125	225	175	348	288	265	23	16.7

CAD INFO

Secure pin for mooring shackles

SPSECUREPIN



CERTIFIED PRODUCT DNV NYTEK NS 9415

Green Pin® Dee Shackle NS9415 FP

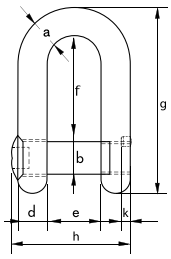
Dee shackle with square sunken hole screw pin (flush) and double safety plug

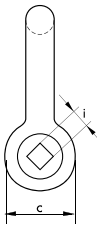
Scan for additional product details

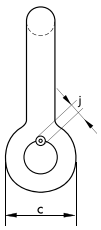


G-4139

- **Material:** bow and pin high tensile steel, grade 6, quenched and tempered
- **Safety Factor:** MBL equals 7 x WLL
- **Standard:** NYTEK regulation and NS 9415, ISO 2415, EN 13889, ASME B30.26
- **Finish:** hot dipped galvanized
- **Certification:** 2.1 | 2.2 | 3.1 | MTC [a] | CE IIA | DNV NS 9415
- **Article code:** scan QR code to see article codes
- **Note:** key for unscrewing the pin and safety plug must be ordered separately





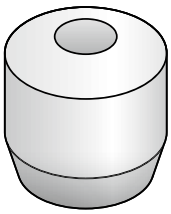


working load limit	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	length	length bolt	size square hole	diameter plug hole	depth plug hole	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	j mm	k mm	kg
2	13.5	16	34	13	22	43	81	51	11	8	8	0.29
3.25	16	19	40	16	27	51	97	63	11	8	8	0.60
4.75	19	22	46	19	31	59	112	74	11	8	8	0.98
6.5	22	25	52	22	36	73	134	85	13	8	8	1.26
8.5	25	28	59	25	43	85	154	99	13	8	8	2.14

CAD

Safety plug for screw pin

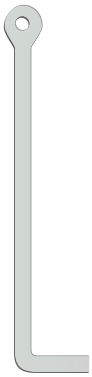
GPPLUG



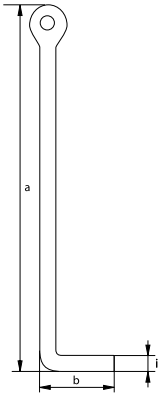
Green Pin® Sunken Hole Key

Accessory for fishing shackle with square sunken hole

Scan for additional product details



E-4170



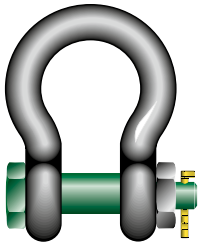
Shackle size

t	i mm	a mm	b mm
2- 3.25 - 4.75	10	190	45
6.5 - 8.5	12	230	45
9.5 - 17	16	280	45

Green Pin® Bow Shackle NS9415 BN

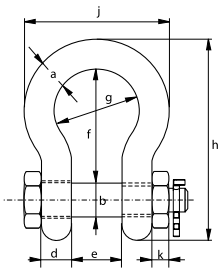
Standard bow shackle with safety bolt acc. to NS 9415

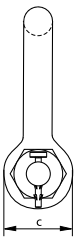
Scan for additional product details



G-4163BG

- **Material:** bow and pin high tensile steel, grade 6, quenched and tempered
- **Safety Factor:** MBL equals 6 x WLL
- **Standard:** NYTEK regulation and NS 9415, ISO 2415, EN 13889 and meets performance requirements of US Fed. Spec. RR-C-271, Type IVA, Class 3, Grade A
  From 2 t and upward these shackles comply with ASME B30.26
- **Finish:** hot dipped galvanized
- **Temperature Range:** -40 °C up to +200 °C
- **Certification:** 2.1 2.2 3.1 MTC [a] CE IIA DNV NS 9415
- **Article code:** scan QR code to see article codes
- **Note:** the synthetic cotter pin is available for sizes WLL 4.75 t up to 12 t and must be ordered separately



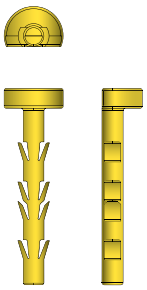


working load limit	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	width bow	length	length bolt	width	thickness nut	weight each
	a	b	c	d	e	f	g	h	i	j	k	
t	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
2	13.5	16	34	13	22	51	32	89	82	58	13	0.42
3.25	16	19	40	16	27	64	43	110	98	75	17	0.74
4.75	19	22	46	19	31	76	51	129	114	89	19	1.18
6.5	22	25	52	22	36	83	58	144	130	102	22	1.77
8.5	25	28	59	25	43	95	68	164	150	118	25	2.58
9.5	28	32	66	28	47	108	75	185	166	131	27	3.66
12	32	35	72	32	51	115	83	201	178	147	30	4.91
13.5	35	38	80	35	57	133	92	227	197	162	33	6.54
17	38	42	88	38	60	146	99	249	202	175	19	8.19
25	45	50	103	45	74	178	126	300	249	216	23	14

CAD

Secure pin for mooring shackles

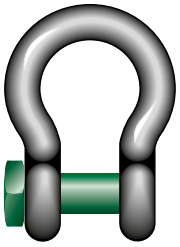
SPSECUREPIN



Scan for additional product details

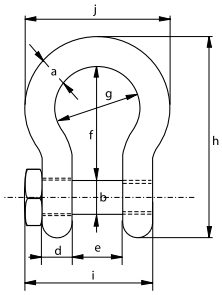
Green Pin® Fishing Bow Shackle SQ

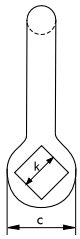
Bow shackle with square headed screw pin



- **Material:** bow and pin high tensile steel, grade 6, quenched and tempered
- **Safety Factor:** MBL equals 6 x WLL
- **Standard:** ISO 2415, EN 13889, ASME B30.26 and meets performance requirements of US Fed. Spec. RR-C-271, grade A
- **Finish:** hot dipped galvanized
- **Certification:** 2.1 2.2 3.1 MTC [a] CE IIA
- **Article code:** scan QR code to see article codes

G-4164





working load limit	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	width bow	length	length bolt	width	width bolt head	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	j mm	k mm	kg
2	13.5	16	34	13	22	51	32	90	57.5	59	22	0.34
3.25	16	19	40	16	27	64	43	110	71	75	27	0.63
4.75	19	22	46	19	31	76	51	129	82	89	32	1
6.5	22	25	52	22	36	83	58	144	93	102	32	1.44
8.5	25	28	59	25	43	95	68	164	108	118	36	2.21
9.5	28	32	67	28	47	108	75	186	120	131	41	3.18
12	32	35	73	32	51	115	83	201	137	147	50	4.32
13.5	35	38	79	35	57	133	92	227	149	162	50	5.67
17	38	42	88	38	60	146	99	249	164	175	60	7.36
25	45	50	104	45	74	178	126	300	192	216	60	12.4

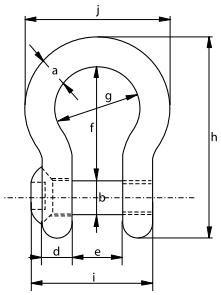
Green Pin® Fishing Bow Shackle FP

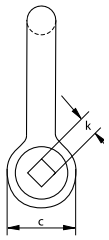
Bow shackle with square sunken hole screw pin (flush pin)



- **Material:** bow and pin high tensile steel, grade 6, quenched and tempered
- **Safety Factor:** MBL equals 6 x WLL
- **Standard:** ISO 2415, EN 13889, ASME B30.26 and meets performance requirements of US Fed. Spec. RR-C-271, grade A
- **Finish:** hot dipped galvanized
- **Certification:** 2.1 2.2 3.1 MTC [a] CE IIA
- **Article code:** scan QR code to see article codes
- **Note:** key for unscrewing the pin must be ordered separately

G-4169



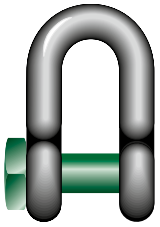


working load limit	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	width bow	length	length bolt	width	size hole head	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	j mm	k mm	kg
2	13.5	16	34	13	22	51	32	89	51	59	11	0.31
3.25	16	19	40	16	27	64	43	110	63	75	11	0.56
4.75	19	22	46	19	31	76	51	129	74	89	11	0.96
6.5	22	25	52	22	36	83	58	144	85	102	13	1.46
8.5	25	28	59	25	43	95	68	164	99	118	13	2.18
9.5	28	32	67	28	47	108	75	185	110	131	17	2.84
12	32	35	73	32	51	115	83	201	122	147	17	3.91
17	38	42	88	38	60	146	99	249	145	175	17	6.81

Green Pin® Fishing Dee Shackle SQ

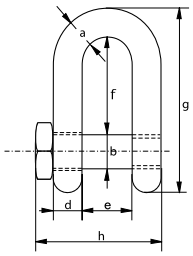
Dee shackle with square headed screw pin

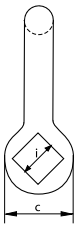
Scan for additional product details



G-4154

- **Material:** bow and pin high tensile steel, grade 6, quenched and tempered
- **Safety Factor:** MBL equals 6 x WLL
- **Standard:** ISO 2415, EN 13889, ASME B30.26 and meets performance requirements of US Fed. Spec. RR-C-271, grade A
- **Finish:** hot dipped galvanized
- **Certification:** 2.1 2.2 3.1 MTC [a] CE IIA
- **Article code:** scan QR code to see article codes





working load limit	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	length	length bolt	width bolt head	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	kg
2	13.5	16	34	13	22	43	82	57.5	22	0.32
3.25	16	19	40	16	27	51	97	71	27	0.58
4.75	19	22	46	19	31	59	112	82	32	0.92
6.5	22	25	52	22	36	73	134	93	32	1.33
8.5	25	28	59	25	43	85	154	108	36	2.03
9.5	28	32	67	28	47	90	168	120	41	2.75
12	32	35	73	32	51	94	180	137	50	3.96
13.5	35	38	79	35	57	115	209	149	50	5.03
17	38	42	88	38	60	127	230	164	60	6.80
25	45	50	104	45	74	149	271	192	60	11.2

Green Pin® Fishing Dee Shackle FP

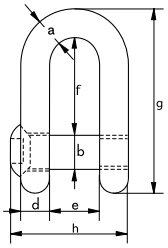
Dee shackle with square sunken hole screw pin (flush pin)

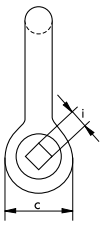
Scan for additional product details

- **Material:** bow and pin high tensile steel, grade 6, quenched and tempered
- **Safety Factor:** MBL equals 6 x WLL
- **Standard:** ISO 2415, EN 13889, ASME B30.26 and meets performance requirements of US Fed. Spec. RR-C-271, grade A
- **Finish:** hot dipped galvanized
- **Certification:** 2.1 2.2 3.1 MTC [a] CE IIA
- **Article code:** scan QR code to see article codes
- **Note:** key for unscrewing the pin must be ordered separately



G-4159

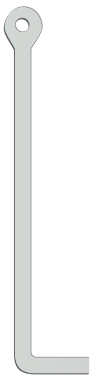




working load limit	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	length	length bolt	size hole head	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	kg
2	13.5	16	34	13	22	43	82	51	11	0.29
3.25	16	19	40	16	27	51	97	63	11	0.60
4.75	19	22	46	19	31	59	112	74	11	0.98
6.5	22	25	52	22	36	73	134	85	13	1.26
8.5	25	28	59	25	43	85	154	99	13	2.14
9.5	28	32	67	28	47	90	168	110	17	2.58
12	32	35	73	32	51	94	180	122	17	3.49
17	38	42	88	38	60	127	230	145	17	6.22

Green Pin® Sunken Hole Key

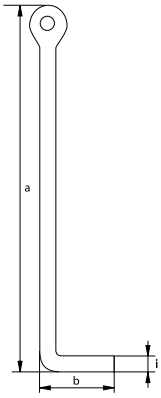
Accessory for fishing shackle with square sunken hole



E-4170

Shackle size

t	i mm	a mm	b mm
2- 3.25 - 4.75	10	190	45
6.5 - 8.5	12	230	45
9.5 - 17	16	280	45

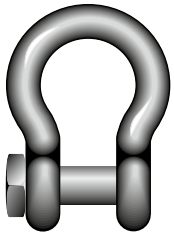


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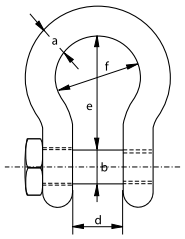
Fishing Shackles

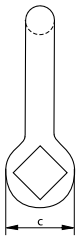
Bow shackle with square head screw pin

- **Material:** mild steel
- **Safety factor:** MBL equals 5 x WLL
- **Finish:** painted blue
- **Certification:** 2.1 2.2



P-3764





working load limit	diameter bow	diameter pin	diameter eye	width inside	length inside	width bow	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	kg
1.5	13	16	32	25	48	36	0.37
2.5	16	20	40	32	64	48	0.71
3	20	22	48	38	79	60	1.24

C

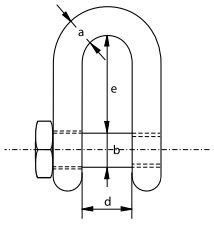
Fishing Shackles

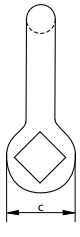
Dee shackle with square head screw pin

- **Material:** mild steel
- **Safety factor:** MBL equals 5 x WLL
- **Finish:** painted blue
- **Certification:** 2.1 2.2



P-3754





working load limit	diameter bow	diameter pin	diameter eye	width inside	length inside	weight each
t	a mm	b mm	c mm	d mm	e mm	kg
1.5	13	16	32	25	48	0.36
2.5	16	20	40	32	64	0.69
3	20	22	48	38	75	1.18
4	22	25	53	44	83	1.61


WHAT IS
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