# FISHING & AQUACULTURE



Green Pin® Fishing shackles are used for easy and efficient connection of fishing components. Green Pin® aquaculture products are used for aquaculture 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<sup>®</sup> 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
- manufacturer's symbol
- traceability code
- steel grade
- CE conformity code (Conformité Européenne)
- Origin

- e.g. WLL 25 T or MBL 40 T - GP

- e.g. HA
- e.g. 8
- e.g. CE
  - e.g. Holland

## Finish

Green Pin<sup>®</sup> fishing shackles are painted or hot dipped galvanized. The Green Pin<sup>®</sup> 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

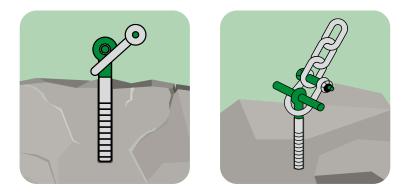
For general (assembly) instructions about shackles we refer to chapter 1, and for master links to chapter 3. For the mooring bolt, please find the specific instructions below.

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

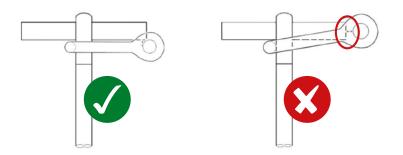
Green Pin<sup>®</sup> Mooring Bolt NS9415 T must be installed by the use of two-component grouting. The advised grouting to be used is Fosroc<sup>®</sup> Lokfix S25 or equivalent. Before installation of the Green Pin<sup>®</sup> Mooring Bolt NS9415, always consult the installation manual of the used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

Green Pin<sup>®</sup> 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.





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

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



3. Insert the Green Pin<sup>®</sup> 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.

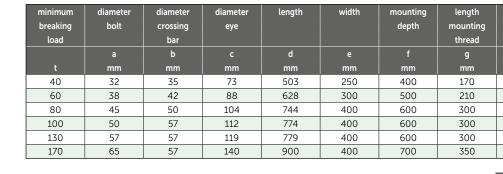


## Green Pin<sup>®</sup> Mooring Bolt NS9415 T **Green P**in<sup>°</sup>



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





CAD INFO

weight

each

kg

5.16

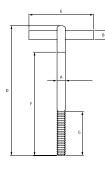
9.06

15.6

20

23.7

32.8





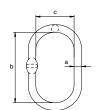
FISHING & AQUACULTURE



## Green Pin® Master Link NS9415 GR8

#### Grade 8 master link acc. to NS 9415

- Material: • Standard:
- alloy steel, grade 8
- d: 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 <sup>b</sup> MPI <sup>a</sup> DNV NS 9415
- Article code: scan QR code to see article codes
- G-6870



minimum breaking load	diameter	length inside	width inside	weight each
	а	b	с	
t	mm	mm	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



Scan for additional product details ≫



## **Green Pin® Mooring Bow Shackle NS9415 BN**



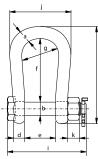


#### Grade 8 mooring bow shackle with safety bolt and sunken bolt head

- 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 <sup>a</sup> CE IIA DNV NS 9415
- Article code: Note:

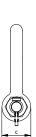
scan QR code to see article codes the synthetic cotter pin is available for sizes MBL 30 t up to 90 t and must be ordered separately

#### G-4863



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
	а	b		d	е	f	g	h	i	j	k	
t	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	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** 







## Green Pin<sup>®</sup> Dee Shackle NS9415 FP



## Green Pin'



G-4139

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

• Material: • Safety Factor: • Standard:

• Article code:

Finish:Certification:

• Note:

- bow and pin high tensile steel, grade 6, quenched and tempered MBL equals 7 x WLL
  - . NYTEK regulation and NS 9415, ISO 2415, EN 13889, ASME B30.26 hot dipped galvanized
    - 2.1 2.2 3.1 MTC <sup>a</sup> CE IIA DNV NS 9415
    - scan QR code to see article codes

key for unscrewing the pin and safety plug must be ordered separately

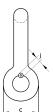


CAD

load limit t 2 3.25 4.75 6.5 8.5

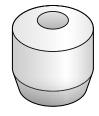
diameter	diameter	diameter	width	width	length	length	length	size	diameter	depth	weight
bow	pin	eye	eye	inside	inside		bolt	square	plug	plug	each
								hole	hole	hole	
а	b	с	d	е	f	g	h		j	k	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
13.5	16	34	13	22	43	81	51	11	8	8	0.29
16	19	40	16	27	51	97	63	11	8	8	0.60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





## Safety plug for screw pin

GPPLUG







## Green Pin<sup>®</sup> Sunken Hole Key

### Accessory for fishing shackle with square sunken hole

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Shackle size	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								



FISHING & AQUACULTURE

Scan for additional product details

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## **Green Pin® Bow Shackle NS9415 BN**

MBL equals 6 x WLL

hot dipped galvanized

2.1 2.2 3.1 MTC <sup>a</sup> CE IIA DNV NS 9415

must be ordered separately

scan QR code to see article codes

Class 3, Grade A

• Temperature Range: -40 °C up to +200 °C

Standard bow shackle with safety bolt acc. to NS 9415





• Material:

• Standard:

• Finish:

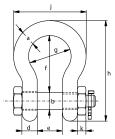
• Note:

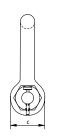
• Safety Factor:

• Certification:

• Article code:

G-4163BG





working	diameter	diameter	diameter	width	width	length	width	length	length	width	thickness	weight
load	bow	pin	eye	eye	inside	inside	bow		bolt		nut	each
limit												
	a	b	с	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

bow and pin high tensile steel, grade 6, quenched and tempered

NYTEK regulation and NS 9415, ISO 2415, EN 13889 and meets

From 2 t and upward these shackles comply with ASME B30.26

the synthetic cotter pin is available for sizes WLL 4.75 t up to 12 t and

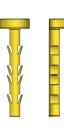
performance requirements of US Fed. Spec. RR-C-271, Type IVA,

CAD

## Secure pin for mooring shackles



5



A





## **Green Pin® Fishing Bow Shackle SQ**

MBL equals 6 x WLL

hot dipped galvanized

scan QR code to see article codes

width

2.1 2.2 3.1 MTC <sup>a</sup> CE IIA

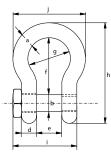
diameter

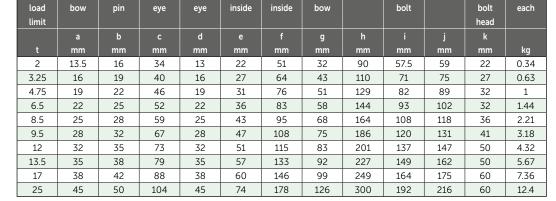
Bow shackle with square headed screw pin

#### Scan for additional product details $\sim$









length

bow and pin high tensile steel, grade 6, quenched and tempered

width

ISO 2415, EN 13889, ASME B30.26 and meets performance

requirements of US Fed. Spec. RR-C-271, grade A

width





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

scan QR code to see article codes

• Material:

• Material:

• Standard:

• Finish:

working

• Safety Factor:

• Certification:

• Article code:

liameter

diameter

• Safety Factor: • Standard:

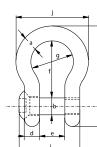
• Finish:

ISO 2415, EN 13889, ASME B30.26 and meets performance requirements of US Fed. Spec. RR-C-271, grade A

MBL equals 6 x WLL

- hot dipped galvanized 2.1 2.2 3.1 MTC ° CE IIA
- Certification:
- Article code:
- Note:





G-4169



key for unscrewing the pin must be ordered separately

bow and pin high tensile steel, grade 6, quenched and tempered



weight

FISHING & AQUACULTURE

width

width

length

length



## **Green Pin® Fishing Dee Shackle SQ**



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### Dee shackle with square headed screw pin

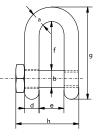
• Material: bow and pin high tensile steel, grade 6, quenched and tempered MBL equals 6 x WLL

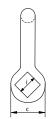
scan QR code to see article codes

ISO 2415, EN 13889, ASME B30.26 and meets performance

- Safety Factor:
- Standard:
- Finish:
- requirements of US Fed. Spec. RR-C-271, grade A hot dipped galvanized
- Certification: 2.1 2.2 3.1 MTC <sup>a</sup> CE IIA
- Article code:







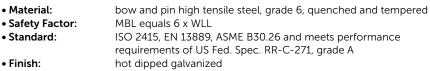
working load	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	length	length bolt	width bolt	weight each
limit		<b>.</b>		d		f	~	<b></b>	head :	
	a	b	C		e		g	h		l en
t	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
2	13.5	16	34	13	22	43	82	57.5	22	0.32
3.25	16	19	40	16	27	51	97	71	27	0.58
4.75	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





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

G-4159



- Certification: 2.1 2.2 3.1 MTC <sup>a</sup> CE IIA
- Article code:
- No

4

17

38

scan QR code to see article codes

ote:		key foi	r unscrewi	ing the pir	must be	ordered se	eparately			
orking load limit	diameter bow	diameter pin	diameter eye	width eye	width inside	length inside	length	length bolt	size hole head	weight each
	а	b	с	d	е	f	g	h	i	
t	mm	mm	mm	mm	mm	mm	mm	mm	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

60

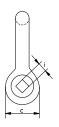
127

230

145

17

6.22





## **Green Pin® Sunken Hole Key**

42

88

38

#### Accessory for fishing shackle with square sunken hole



#### Shackle size

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



E-4170



Scan for additional product

details  $\geq$ 



## **Fishing Shackles**

Bow shackle with square head screw pin

painted blue

2.1 2.2

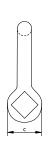
- Material: mild steel
  - actor: MBL equals 5 x WLL
- Safety factor:
  Finish:
- Certification:



P-3764

С

working	diameter	diameter	diameter	width	length	width	weight
load	bow	pin	eye	inside	inside	bow	each
limit							
	а	b	с	d	е	f	
t	mm	mm	mm	mm	mm	mm	kg
1.5	13	16	32	25	48	36	0.37
1.5 2.5	13 16	16 20	32 40	25 32	48 64	36 48	0.37



С

## **Fishing Shackles**

Dee shackle with square head screw pin

painted blue

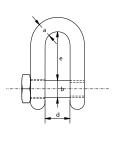
- Material:
  - mild steel tor: MBL equals 5 x WLL

2.1 2.2

- Safety factor: • Finish:
- Certification:

working load limit	diameter bow	diameter pin	diameter eye	width inside	length inside	weight each
	а	b	с	d	e	
t	mm	mm	mm	mm	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

P-3754



## WHAT IS BELOW SURFACE MUST BE ABOVE STANDARD.



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# Green Pin<sup>®</sup>: the leading brand for premium quality chain and wire rope equipment in the world

- ✓ Premium quality lifting and lashing equipment
- ✓ Supplied with a range of certifications (e.g. DNV, Lloyd's)
- ✔ Unrivalled stock availability of 99%
- ✓ Comprehensive, worldwide support
- ✔ Available in over 100 countries worldwide

#### greenpin.com







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