

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Chain, shackles, swivels, sockets**

with type designation(s)

**Green pin standard shackles, Green pin polar shackles**

Issued to

**Van Beest B.V.****Slidrecht, Zuid-Holland, Netherlands**

is found to comply with

**DNV GL standard DNVGL-ST-0378 – Standard for offshore and platform lifting appliances****Application :****Shackles for offshore cranes**Issued at **Høvik** on **2020-03-24**for **DNV GL**This Certificate is valid until **2023-06-05**.DNV GL local station: **Rotterdam, Offshore & Newbuilding**Approval Engineer: **Antonio Sendin Alvarez**

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**Aldo Matteucci**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-015665-3**  
 Certificate No: **TAS00001H7**  
 Revision No: **2**

## Product description

Green pin standard shackles and green pin polar shackles:

Minimum design temperature: -20 deg.  
 Dynamic factor (DAF): 1.3  
 Safe Working Load (SWL) as stated in the type approved drawings.

## Application/Limitation

1. All materials are to be delivered with 3.1 material certificates, documenting mechanical properties and chemical composition in accordance with the Type Approval documentation.
2. Material specification for each shackle is stated in the type approved documentation.

## Type Approval documentation

The following drawings are approved on 2014-06-10, except (\*) which are approved on 2020-03-23

<b>Group</b>	<b>Rev.</b>	<b>Drawings included in the booklet</b>
G-5163	31-07-09	5100 rev0, (SWL=2 tonnes) 5101 rev0, (SWL=3.25 tonnes) 5102 rev0, (SWL=4.75 tonnes) 5103 rev0, (SWL=6.5 tonnes) 5104 rev0, (SWL=8.5 tonnes) 5105 rev0, (SWL=9.5 tonnes) 5106 rev0, (SWL=12 tonnes) 5107 rev0, (SWL=13.5 tonnes) 5108 rev0, (SWL=17 tonnes) 5109 rev0, (SWL=25 tonnes) 5110 rev0, (SWL=35 tonnes) 5111 rev0, (SWL=42.5 tonnes) 5112 rev0, (SWL=55 tonnes) 5113 rev0. (SWL=85 tonnes)
G-4163	31-07-09	5000 rev0, (SWL=0.5 tonnes) 5001 rev0, (SWL=0.75 tonnes) 5002 rev0, (SWL=1 tonnes) 5003 rev0, (SWL=1.5 tonnes) (*) 5004 rev0, (SWL=2 tonnes) 5005 rev0, (SWL=3.25 tonnes) 5006 rev0, (SWL=4.75 tonnes) 5007 rev0, (SWL=6.5 tonnes) 5008 rev0, (SWL=8.5 tonnes) 5009 rev0, (SWL=9.5 tonnes) 5010 rev0, (SWL=12 tonnes) 5011 rev0, (SWL=13.5 tonnes) 5012 rev0, (SWL=17 tonnes) 5013 rev0, (SWL=25 tonnes) 5014 rev0, (SWL=35 tonnes) 5015 rev0, (SWL=42.5 tonnes) 5016 rev0, (SWL=55 tonnes) 5017 rev0. (SWL=85 tonnes)
G-4161	30-07-09	5050 rev0, (SWL=0.33 tonnes) 5051 rev0, (SWL=0.5 tonnes) 5052 rev0, (SWL=0.75 tonnes) 5053 rev0, (SWL=1 tonnes) 5054 rev0, (SWL=1.5 tonnes) (*)

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		5055 rev0, (SWL=2 tonnes) 5056 rev0, (SWL=3.25 tonnes) 5057 rev0, (SWL=4.75 tonnes) 5058 rev0, (SWL=6.5 tonnes) 5059 rev0, (SWL=8.5 tonnes) 5060 rev0, (SWL=9.5 tonnes) 5061 rev0, (SWL=12 tonnes) 5062 rev0, (SWL=13.5 tonnes) 5063 rev0, (SWL=17 tonnes) 5064 rev0, (SWL=25 tonnes) 5065 rev0, (SWL=35 tonnes) 5066 rev0, (SWL=42.5 tonnes) 5067 rev0. (SWL=55 tonnes)
G-4153	30-07-09	5025 rev0, (SWL=2 tonnes) 5026 rev0, (SWL=3.25 tonnes) 5027 rev0, (SWL=4.75 tonnes) 5028 rev0, (SWL=6.5 tonnes) 5029 rev0, (SWL=8.5 tonnes) 5030 rev0, (SWL=9.5 tonnes) 5031 rev0, (SWL=12 tonnes) 5032 rev0, (SWL=13.5 tonnes) 5033 rev0, (SWL=17 tonnes) 5034 rev0, (SWL=25 tonnes) 5035 rev0, (SWL=35 tonnes) 5036 rev0, (SWL=42.5 tonnes) 5037 rev0, (SWL=55 tonnes) 5038 rev0. (SWL=85 tonnes)
G-4151	30-07-09	5075 rev0, (SWL=0.33 tonnes) 5076 rev0, (SWL=0.5 tonnes) 5077 rev0, (SWL=0.75 tonnes) 5078 rev0, (SWL=1 tonnes) 5079 rev0, (SWL=1.5 tonnes) (*) 5080 rev0, (SWL=2 tonnes) 5081 rev0, (SWL=3.25 tonnes) 5082 rev0, (SWL=4.75 tonnes) 5083 rev0, (SWL=6.5 tonnes) 5084 rev0, (SWL=8.5 tonnes) 5085 rev0, (SWL=9.5 tonnes) 5086 rev0, (SWL=12 tonnes) 5087 rev0, (SWL=13.5 tonnes) 5088 rev0, (SWL=17 tonnes) 5089 rev0, (SWL=25 tonnes) 5090 rev0, (SWL=35 tonnes) 5091 rev0. (SWL=42.5 tonnes) 5092 rev0. (SWL=55 tonnes)

Document Number	Rev.	Title
	04 March 2014	Green pin specifications DNV cert. 2.22
KS-06-106B	11-09-2013	Material specifications GP shackles
KS-06-14H	08-03-2013	Requirements pins 6-50 mm for green pin shackles
KS-06-06N	09-08-2011	Material SAE 8620 untreated
KS-06-05N	09-08-2011	Material PSt-52-3 untreated
KP-09-01C	27-05-2008	Process shackle manufacturing
KS-06-15A	31-10-2007	Split pins for green shackles with safety bolts
KS-06-08G	10-12-2007	Hexagon nuts metric and UNC (inch series)

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	20/09/2019	MBL FEA validation GPGHBB11
	20/09/2019	PL FEA validation GPGHBB11
	20/09/2019	PL FEA validation GPGHMB11
	20/09/2019	MBL FEA validation GPGHMB11
	20/09/2019	MBL FEA validation GPGDBB11
	20/09/2019	PL FEA validation GPGDBB11
		Load test reports

## Tests carried out

Prototype tests carried out 2013-02-22 on parts GPGHMB45, GPGHMB35, GPGHMB22, GPGHMB16 and witnessed by the DNV GL surveyor

In order to obtain a CG3 certificate, each shackle shall be tested according to the DNVGL-ST-0378 Table 14-2

## Marking of product

Each shackle is to be marked according to DNVGL-ST-0378 Sec.14.5.

## Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.

END OF CERTIFICATE