



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAS000018M**  
Revision No:  
**1**

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## This is to certify:

**that the Chain, shackles, swivels, sockets**

with type designation(s)  
**Green Pin Power Sling Shackles**

issued to  
**Royal Van Beest Group B.V.**  
**Slidrecht, Zuid-Holland, Netherlands**

is found to comply with  
**DNV standard DNV-ST-0378 – Offshore and platform lifting appliances**  
**DNV standard DNV-ST-0377 – Standard for shipboard lifting appliances**

## Application:

**See next page.**

Issued at **Høvik** on **2024-10-02**

for **DNV**

This Certificate is valid until **2029-10-01**.

DNV local unit: **Rotterdam, Offshore & Newbuilding**

Approval Engineer: **Axel Janson**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.





Job ID: 262.1-026975-2  
Certificate no.: TAS000018M  
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## Product description

Fourteen (14) models of Green Pin Power Sling Shackles with WLL 125 to 1550 metric tons.

## Application/Limitation

<u>Design Parameter</u>	<u>Value</u>
WLL - SLPGP0125	125 t
WLL - SLPGP0150	150 t
WLL - SLPGP0200	200 t
WLL - SLPGP0250	250 t
WLL - SLPGP0300	300 t
WLL - SLPGP0400	400 t
WLL - SLPGP0500	500 t
WLL - SLPGP0600	600 t
WLL - SLPGP0700	700 t
WLL - SLPGP0800	800 t
WLL - SLPGP0900	900 t
WLL - SLPGP1000	1000 t
WLL - SLPGP1250	1250 t
WLL - SLPGP1550	1550 t
Minimum Design Temperature:	-20 °C
Max. Dynamic Amplification Factor (DAF):	1.3

## Type Approval documentation

The following drawings are Type Approved:

### Assembly

<u>Drwg. No</u>	<u>Rev.</u>	<u>Title</u>
SLPGP0125P-Assembly	D	Green Pin Power Sling® Shackle BN Assembly (SLPGP0125 WLL125T)
SLPGP0150P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0150 WLL150T)
SLPGP0200P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0200 WLL200T)
SLPGP0250P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0250 WLL250T)
SLPGP0300P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0300 WLL300T)
SLPGP0400P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0400 WLL400T)
SLPGP0500P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0500 WLL500T)
SLPGP0600P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0600 WLL600T)
SLPGP0700P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0700 WLL700T)
SLPGP0800P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0800 WLL800T)
SLPGP0900P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP0900 WLL900T)
SLPGP1000P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP1000 WLL1000T)
SLPGP1250P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP1250 WLL1250T)
SLPGP1550P-Assembly	C	Green Pin Power Sling® Shackle BN Assembly (SLPGP1550 WLL1550T)

### Bow

<u>Drwg. No</u>	<u>Rev.</u>	<u>Title</u>
SLPGP0125-Shackle Bow-Production	B	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0150-Shackle Bow-Production	B	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0200-Shackle Bow-Production	B	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0250-Shackle Bow-Production	B	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0300-Shackle Bow-Production	B	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0400-Shackle Bow-Production	B	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0500-Shackle Bow-Production	B	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0600-Shackle Bow-Production	A	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0700-Shackle Bow-Production	A	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0800-Shackle Bow-Production	A	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP0900-Shackle Bow-Production	A	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP1000-Shackle Bow-Production	A	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP1250-Shackle Bow-Production	A	Green Pin Power Sling® Shackle BN Shackle bow
SLPGP1550-Shackle Bow-Production	A	Green Pin Power Sling® Shackle BN Shackle bow

### Pin

<u>Drwg. No</u>	<u>Rev.</u>	<u>Title</u>
SLPGPxxxxPP-Production-125t~500t	C	Green Pin Power Sling® Shackle BN Shackle Pin (125t/150t/200t/250t/300t/400t/500t)
SLPGPxxxxPP-Production-600t~1250t	D	Green Pin Power Sling® Shackle BN Shackle Pin (600t/700t/800t/900t/1000t/1250t)
SLPGPxxxxPP-Production-1550t~3000t	B	Green Pin Power Sling® Shackle BN Shackle Pin (1550t/1750t/2000t/2500t/3000t)

### Nut / Split-locking Pin

<u>Drwg. No</u>	<u>Rev.</u>	<u>Title</u>
SLPGPxxxPN-Production	B	Green Pin Power Sling® Shackle BN Hexagon nut (Range 125-3000T)
SLPGPxxxxSPP-Production	A	Green Pin Power Sling® Shackle BN Split pin and safety pin

The following drawings are For Information:

Design Analysis

<u>Report. No</u>	<u>Rev.</u>	<u>Description</u>
VB-FEA-SLPGP0125-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 125 T
VB-FEA-SLPGP0150-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 150 T
VB-FEA-SLPGP0200-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 250 T
VB-FEA-SLPGP0250-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 250 T
VB-FEA-SLPGP0300-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 300 T
VB-FEA-SLPGP0400-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 400 T
VB-FEA-SLPGP0500-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 500 T
VB-FEA-SLPGP0600-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 600 T
VB-FEA-SLPGP0700-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 700 T
VB-FEA-SLPGP0800-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 800 T
VB-FEA-SLPGP0900-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 900 T
VB-FEA-SLPGP1000-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 1 000 T
VB-FEA-SLPGP1250-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 1 250 T
VB-FEA-SLPGP1550-01-V0	17/08/2023	FEA of Green Pin Power Sling Shackle WLL 1 550 T

Bow Marking

<u>Drwg. No</u>	<u>Rev.</u>	<u>Title</u>
SLPGP0125-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0150-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0200-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0250-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0300-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0400-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0500-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0600-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0700-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0800-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP0900-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP1000-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP1250-Marking	A	Green Pin Power Sling® Shackle BN Marking
SLPGP1550-Marking	A	Green Pin Power Sling® Shackle BN Marking

**Fabrication and Testing Procedures**

Testing:

1. If a DNV Product Certificate is required, each shackle shall be tested according to DNV-ST-0378, Table 14-2. The testing shall be witnessed by a DNV surveyor.
2. Charpy testing shall be performed in accordance with DNV-ST-0378, §3.4.

NDE Procedures:

3. NDE/NDT shall be performed in accordance with DNV-ST-0378, §3.4.



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## Marking of product

Each shackle shall be marked according to DNV-ST-0378 Sec.14.5. Additional marking per manufacturer's specifications.

## Comments

<u>No.</u>	<u>Comment</u>
1	All materials shall be delivered with 3.1 certificates according to EN 10204.
2	The shackles have been analysed using FEA for a minimum design safety factor of 5 relative to MBL.
3	Fatigue calculations have not been analysed as part of this design approval.
4	No welding shall be performed to the shackles.
5	This Type Approval Certificate replaces the previous certificate TAS000018M rev.0.

## Periodical assessment

For retention of this Type Approval Certificate, a DNV surveyor shall carry out surveys every second year in accordance with DNV Type Approval Scheme DNV-CP-0338.

END OF CERTIFICATE