

P-5367

Green Pin® Spring Release ROV Shackles are specifically designed for ROV applications. Green Pin® Spring Release ROV Shackle parts are connected by ropes to prevent loss of any parts during release. The rope end is fitted with a monkey's fist for easy release by ROV tooling. Green Pin® Spring Release ROV Shackle range 12-150t. Green Pin® Spring Release ROV Shackles are suitable for use in extreme climatic conditions with material properties guaranteed up to temperatures of -40°C. Shackles with an WLL of 42.5t or higher do need a Green Pin® Compression tool (the Compression tool (P-5368) is sold separately).

- **Finish:** Shackle body painted white, pin painted green
- **Temperature range:** -40°C up to 200°C (-40°F up to 392°F)
- **Certificats:** 2.1 2.2 3.1 MTC^a MTC^b LROS CE

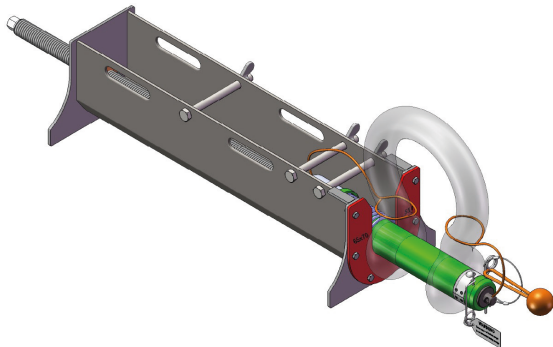
* For shackles ≥ WLL 150 t

Instructions to use

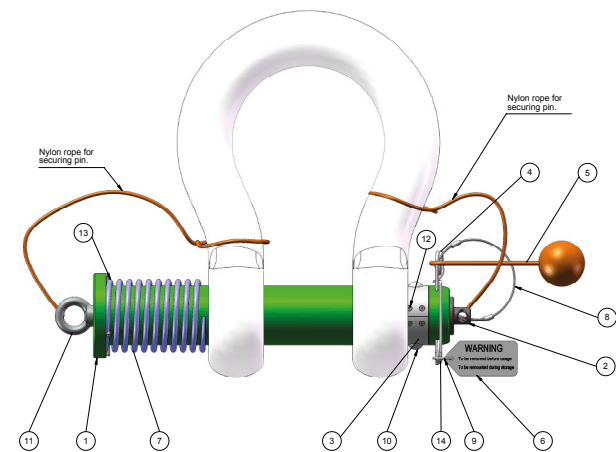
Shackles should be inspected before use to ensure that:

- all markings are legible;
- the body and pin are both identifiable as being of the same size, type and make;
- all parts of the pin and the body are undamaged;
- the body and the pin are not distorted or unduly worn;
- the body and pin are free from nicks, gouges, cracks and corrosion;
- shackles may not be heat treated as this may affect their Working Load Limit;
- never modify, repair or reshape a shackle by welding, heating or bending as this will affect the Working Load Limit;
- when using a spring loaded Green Pin® Spring Release ROV Shackle with an ROV the safety pin (14) is removed;
- when transporting a spring loaded Green Pin® Spring Release ROV Shackle the safety pin (14) is mounted;
- the shackle will be used only for in-line loading applications;

Compression tool



Drawing and parts list



no.	quantity	description
1	1	main pin
2	1	firing pin
3	1	ball securing ring
4	1	spring pin, double type
5	1	monkey's fists
6	1	warning tag
7	1	compression spring
8	1	wire rope sling
9	1	key ring
10	2	steel balls
11	1	eye bolt DIN 580
12	8	screws DIN 7991
13	5	coiled pins DIN 1481
14	1	safety pin

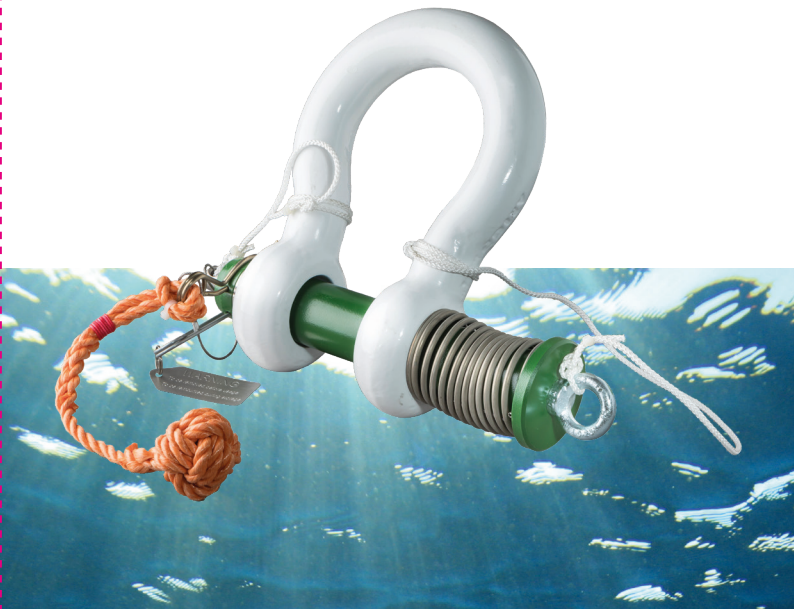
A compression tool can be obtained at Van Beest. For Green Pin® Spring Release ROV Shackles starting from 42.5 ton. Green Pin® Spring Release ROV Shackles up to and including 35 ton can be compressed by hand. The compression tool is provided with changeable plates that fits the different shackle sizes.

1. Make sure the threaded hole and threaded stud of the compression tool are properly greased.
2. Place the compression tool on a clean and steady floor.
3. Put the disassembled / not spring loaded Green Pin® Spring Release ROV Shackle parts in the compression tool. Make sure that the **main pin** (1) and **compression spring** (7) are in a straight line with the shackle body holes.
4. Mount the hexagon bolts into the compression tool as a safety device.
5. The end of the spindle of the compression tool will fit over the **eye bolt** (11).
6. Turn the spindle clockwise into the frame, this will compress the **compression spring** (7) and move the **main pin** (1) into the shackle body.
7. After the **steel balls** (10) have passed the free shackle body, the **firing pin** (2) has to be mounted in the **main pin** (1).
8. Then the **spring pin** (4) has to be mounted in the **main pin** (1) to lock the **firing pin** (2).
9. Mount the **safety pin** (14) with **warning tag** (6) in the **main pin** (1). Now the shackle pin is fully secured.
10. Turn the spindle anti-clockwise until the **eye bolt** (11) of the **main pin** (1) is completely free.
11. Disassemble the hexagon bolts.
12. Lift the shackle out of the compression tool. When needed push down the compression tool so this comes loose from the shackle.

Instructions for use



Green Pin® Spring Release ROV Shackle Assembly Instructions



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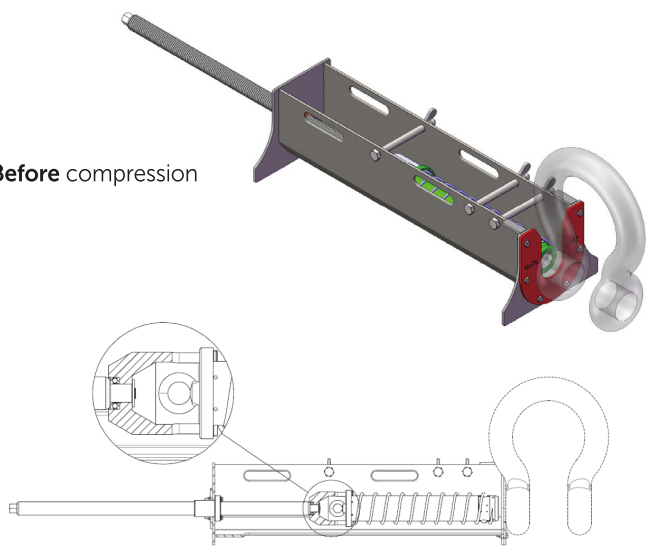


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A VAN BEEST BRAND

Before compression



Releasing

When removing the **safety pin** (14), with **warning tag** (6) attached, the Green Pin® Spring Release ROV Shackle is now ready for use by e.g. an ROV. The shackle pin should be unloaded before releasing the shackle pin. By means of the monkey fist the two safety features, **spring pin** (4) and **firing pin** (2), can be released.

The **main pin** (1) will be pushed out the shackle body by the **compression spring** (7).

WARNING: make sure that no persons or equipment are in the path of the main pin (1) when releasing the Green Pin® Spring Release ROV Shackle.

For transport purposes or as additional safety feature the **safety pin** (14), with **warning tag** (6) attached, must be mounted in the **main pin** (1).

CAUTION: when the safety pin (14), with warning tag (6) attached, is installed it is not possible to release the Green Pin® Spring Release ROV Shackle by means of a robotized device such as an ROV.

Inspection

It is required that Green Pin® Spring Release ROV Shackles are regularly inspected and that the inspection should take place in accordance with the safety standards given in the country of use. This is required because the products in use may be affected by wear, misuse, overloading etc. which may lead to deformation and alteration of the material structure. Inspection should take place at least every six months and even frequently when the shackles are used in severe operating conditions.

Regular Maintenance

Visual inspection for damages and dirt should be carried out prior to use. The Green Pin® Spring Release ROV Shackle must be inspected regularly by a competent person for proper functioning and damages. Please note that disassembly and re-assembly of the Green Pin® Spring Release ROV Shackle may be performed by competent persons only.

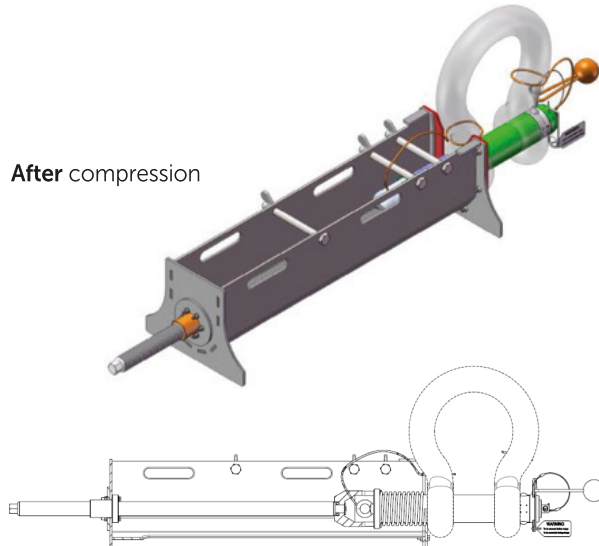
Disassembly of Green Pin® Spring Release ROV Shackles

1. If spring loaded, release the Green Pin® Spring Release ROV Shackle by pulling the monkey fist.
If the **safety pin** (14), with **warning tag** (6), is mounted, remove this first.

WARNING: make sure that no persons or equipment are in the path of the main pin (1) when releasing the Green Pin® Spring Release ROV Shackle.

2. After releasing the Green Pin® Spring Release ROV Shackle, the **spring pin** (4) and the **firing pin** (2) come loose from the **main pin** (1).

After compression



3. Remove the countersunk hexagon **screws** (12).
4. Remove the **ball securing ring** (3).
5. Remove the **steel balls** (10).
6. Inspect all parts for wear and cracks. Replacement parts can be ordered from Van Beest.
7. If all parts are free of wear and damages, the Green Pin® Spring Release ROV Shackle can be reassembled.

Reassembly of Green Pin® Spring Release ROV Shackles

1. Mount **steel balls** (10).
2. Mount **ball securing ring** (3).
3. Mount the countersunk hexagon **screws** (12). Screws to be locked by retaining fluid such as Loctite 243.
4. Check if the system is working correctly after re-assembling.

Testing

After replacement of parts the Green Pin® Spring Release ROV Shackle has to be tested. After replacement of the pin the Green Pin® Spring Release ROV Shackle has to be proof load tested by an certified testing facility. The Working load limit (WLL) is mentioned on the shackle body, the required Proof Load (PL) is mentioned on the original test certificate and in the Green Pin® catalogue.

Transport

For transport purposes or as additional safety feature the **safety pin** (14), with **warning tag** (6) attached, must be mounted in the **main pin** (1).

CAUTION: when the **safety pin** (14), with **warning tag** (6) attached, is installed it is not possible to release the Green Pin® Spring Release ROV Shackle by means of a robotized device such as an ROV.

Storage

The Green Pin® Spring Release ROV Shackle can best be stored uncompressed.
Storing the Green Pin® Spring Release ROV Shackle uncompressed:

- is better for the preservation of the shackles;
- is easier in use, as the shackles often need to be uncompressed to be assembled in a sling or pad eye;

Slightly oil the shackle after rinsing with fresh water and drying will preserve this shackle and keep it in good condition;

If the Green Pin® Spring Release ROV Shackle is stored compressed, please be sure that the **safety pin** (14), with **warning tag** (6) attached, is mounted in the **main pin** (1).

Instructions for use

Green Pin® Spring Release ROV Shackle P-5367

