

# Rescue lift

- Threefold purchase (tackle) built of low friction rings
- 4 m lifting height
- Can be fixed to shroud and/or spinnaker halyard
- High capacity by 6 x 4 mm dyneema, up to 1000 kg working load\*
- Very low weight and small package size:  
≤ 800 g including safety carabiner and snap shackle  
30 x 20 x 5 cm, suits into air luggage



# Rescue lift use and construction

## with threefold purchase built of low friction rings and dyneema line\*, safety carabiner and snap shackle

The rescue lift is attached to fix point on the starboard shroud. A Threefold purchase is built of 4 mm dyneema line and low friction rings. It allows to rescue a person outboard and lifting 50 kg and up to 1000 kg\* from the water above the life lines on board.

The fix point is constructed with a 60 cm open sling and a [Franz-Bachmann-Bandklemmknoten](#) (Bachmann band clamp hitch), which is installed before leaving port.

The rescue lift has a safety carabiner fixed with a soft shackle and an additional long soft shackle at its top (**1. UP ↑**). Either one can be hooked to the fix point and/or a spinnaker halyard. If used with the halyard only for fixing to the top, then the other shackle can be used to establish a horizontal fix to the shroud, which can move up and down.

The threefold purchase has a length of 4 m (6 x 4 m = 24 m of 4 mm dyneema line) and a working load up to 1000 kg\*. On sailing yachts at least 3 m are needed for securely lifting a person from the waterline above the life lines. The additional 1 m provides for some horizontal and vertical flexibility of the rescue lift in strong wave motion.

At its lower end, a simple 20 cm loop of 6 mm dyneema and a snap shackle with a bright grip line are used to **2. ATTACH** a person over board. The snap shackle can be fixed to the lift strap of a life jacket (in the water) or an extended [personal rescue loop](#), which can be pulled onto the deck. If the person over board wears a life belt with a personal life line, its shackle can be hooked to the dyneema loop. Additional length of the line attached to the lower end of the purchase will require to hoist the top of the rescue lift higher with help of a halyard before starting to pull! This additional height will be required to securely lift the person above the yachts life lines.

From the top low friction ring, 15 m of coiled 4 mm dyneema line can be pulled (**3. PULL ←**) by hand with sailing gloves and/or led to a winch in the cockpit. Securing the end on the winch requires manifold coiling of the thin dyneema line around the winch drum. Pulling at moderate speed is required in order to limit the heat from friction at the dyneema line. The yellow purchase line has loop splices on both ends, fixed to the top of the lift by a soft shackle and for improved grip or extension at the pull end, when needed.

\* Very careful work with dyneema line is required to assure the strength and safety of the dyneema loops and splices. Use as life saving equipment must rely on the professional assessment of the materials used, the individual work process and its result as well as regular check of the equipment before use. Therefore, this instruction is subject to an absolute disclaimer of warranty and waiver of liability (see also [CC BY 4.0 license](#)).

# Rescue lift required parts

## Material:

- 40 m dyneema hollow braided line, yellow, 4 mm diameter,  $\geq 10$  kN breaking load\*, incl. 1 m for small soft shackle for fixing the end of the purchase line to the top
- 6 m dyneema hollow braided line, red, 6 mm diameter,  $\geq 40$  kN breaking load,  $\geq 1$  t working load\*
- 4x small low friction rings 10x7 mm  
2x large low friction rings 14x10 mm
- Snap shackle with swivel eye and strong welded ring for opening,  $\geq 20$  kN breaking load, stainless
- Safety carabiner with 25 mm wide opening,  $\geq 20$  kN breaking load, e.g. Tango, Key Lock, ...
- Soft shackle,  $\geq 20$  kN beraking load (or DIY from additional 1.5 m dyneema 6 mm)
- Nylon or polyester open sling , 60 cm,  $\geq 20$  kN breaking load, 16 mm band width
- 30 cm 8 mm grip line for snap shackle opening, bright colour, e.g. Liros Reflecta
- Whipping twine (or strong dental floss)
- Short pieces of duct tape and adhesive reflective tape

## Tools:

- Sharp cutter
- Cutting board (strong wood board works well)
- 4 m measure
- Splicing fids for 4 mm, 6 mm and 8 mm line diameter
- Needle
- Water permanent marker for indicating the instruction key words “1. UP ↑”, “2. ATTACH”, “3. PULL ←” at either end of the rescue lift

# Rescue lift weight and cost estimate

for threefold purchase built of low friction rings and dyneema line, safety carabiner and snap shackle

Components	weight estimate	material est. cost
Threefold purchase (tackle): 40 m 4 mm dyneema, $\geq 10$ kN breaking load,	260 g	57 €
Rescue lift: 6 m 6 mm dyneema, $\geq 40$ kN breaking load, $\geq 1$ t working load	130 g	26 €
Low friction rings, 4x 10x7 mm, 2x 14x10 mm	60 g	54 €
Snap shackle with swivel eye, $\geq 20$ kN breaking load	130 g	14 €
Safety carabiner with wide opening, $\geq 20$ kN breaking load	130 g	17 €
Soft shackle, 2 t braking load (or DIY from additional 1.5 m 6 mm dyneema)	30 g	15 € (7 €)
Nylon or polyester open sling , 60 cm, $\geq 20$ kN breaking load	50 g	4 €
Short grip line and pieces of duct tape and reflective tape	5 g	4 €
<b>Complete rescue lift</b> incl. safety carabiner, snap shackle, threefold purchase	<b>800 g</b>	<b>200 €</b>

# Rescue lift, completely coiled



# Rescue lift, coiled and packed

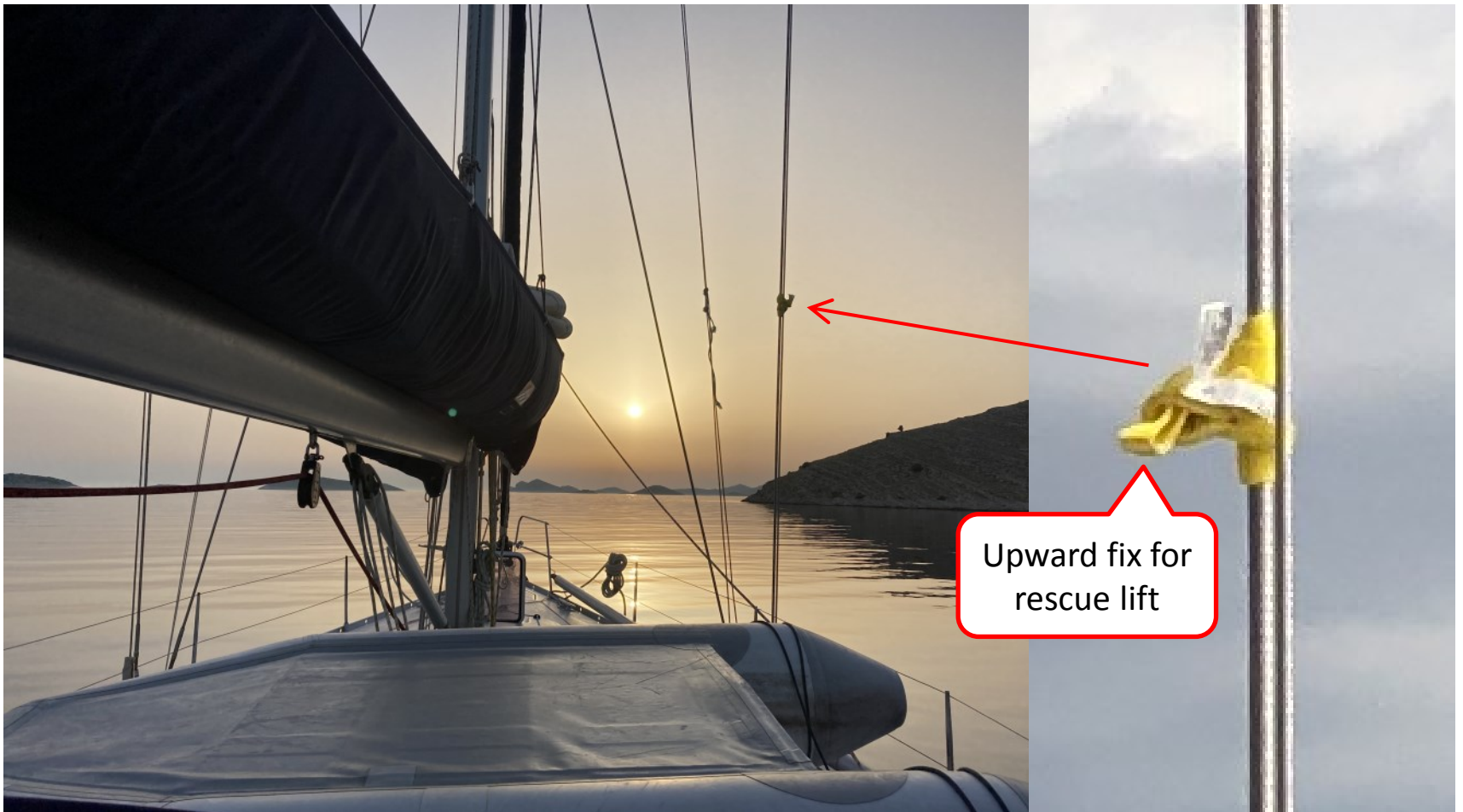
30 x 20 x 5 cm



fold  
Arbeits  
Dyneema 4mm  
125 daN = 1,25t

FLASCHENZUG - KRAN  
5-fach, Dyneema 4mm Ø  
Arbeitslast 1250 daN = 1,25t  
TACKLE - KIT  
Dyneema 4mm Ø  
load 1250 daN = 1,25t

# Permanent fix point at starboard shroud by 60 cm sling and [Franz Bachmann Bandklemmknoten](#)



# Hitch is best to be tested with a hammock





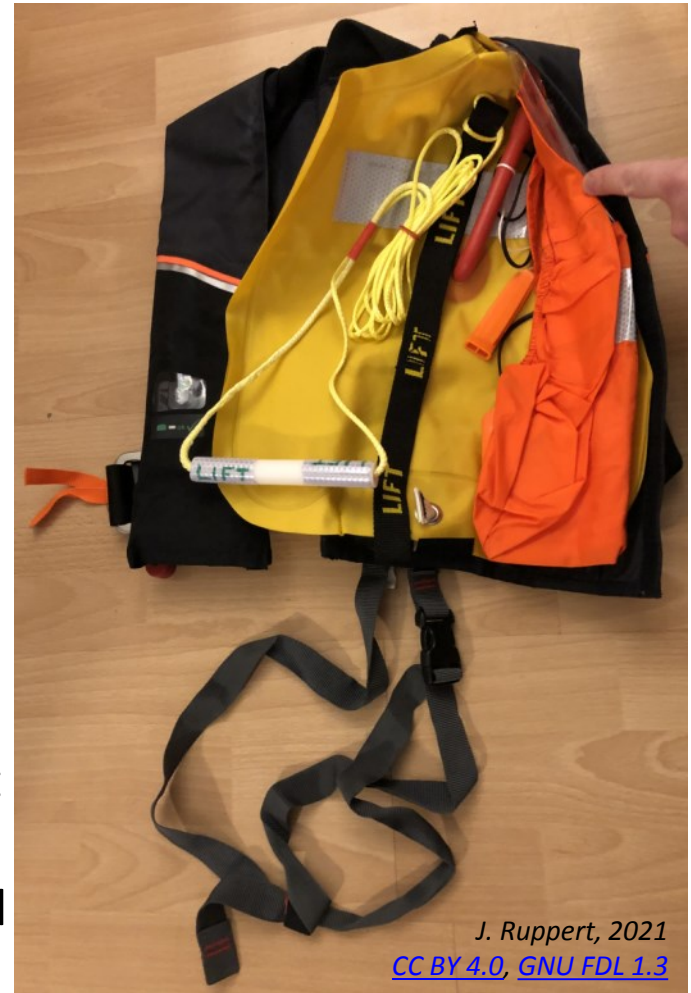
# Personal rescue loop

A personal rescue loop is commercially available from <http://moblifesavers.com/>. It is approved for several life jackets.

The website also provides further detailed instruction on:

1. How to fit it to the life belt or lift strap of a life jacket
2. How to use it for the rescue of a person over board

A Do-It-Yourself solution for the [personal rescue loop](#) allows adding a floating lift handle with reflective tape. It is fitted into a life jacket and extends its lift strap by 1.6 m. A person over board can then be secured from on board of a sailing yacht.



*J. Ruppert, 2021*

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