

Important !

- ⇒ **This operation and maintenance manual must be read thoroughly**
- ⇒ **Regular training exercises are essential at periodic intervals**
- ⇒ **Special training for emergencies must be incorporated in exercises**
- ⇒ **Use of a second securing device is recommended during training**

1. Liability

1.1. Liability

Swiss Rescue GmbH does not accept any liability for damage or accidents that result from incorrect handling. The operation and use described in the present operation and maintenance manual must be followed.

The Swiss Rescue Standard may only be used in the cases described (see under purpose)

The necessary visual and functional inspections must be carried out before any new operation.

1.2. Maintenance

Any maintenance and repair work may only be carried out by Swiss Rescue GmbH. If this is not the case, then no liability is accepted which results from neglect of the maintenance of the Swiss Rescue Standard equipment described in the present operation and maintenance manual or from maintenance other than that described in the manual.

The inspection intervals specified in this manual must be observed. Inspections are to be recorded in the inspection logbook.

Maintenance and replacement of ropes should conform with section 5.2 of this manual. Replacement of ropes, which may only be carried out by Swiss Rescue GmbH, must be recorded in the Ropes logbook.

1.3. Storage

Swiss Rescue GmbH does not accept any liability for damage or accidents that arise from storage of the Swiss Rescue Standard equipment in a manner other than described in the present operation and maintenance manual.

The requirements under Storage must be observed.

2. Introduction

2.1. Equipment List, Standard Specially for Rescue

- (1) Rescue and entry equipment, Swiss Rescue Standard
- (2) Rope Stopp unit
- (3) Pulley, revolving 2:1
- (4) Rescue seat belt or triangle
- (5) Safety or holding belt
- (6) Polyamide rope with one thimble
- (7) Steel cable with two thimbles
- (8) Safety rope with two thimbles
- (9) Five carabines

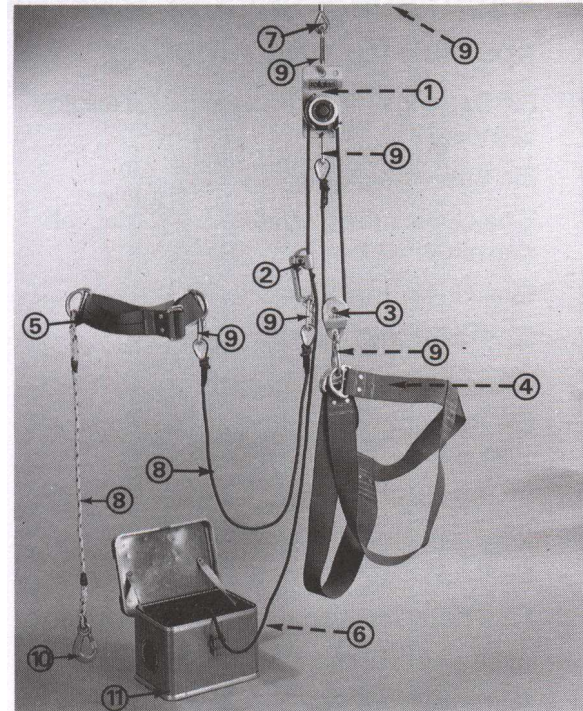


Abbildung 1

2.2. Equipment List, ES Specially for entry

- (1) Rescue and entry unit
Swiss Rescue
- (2) Rope Stopp unit
- (3) Pulley, revolving 3:1
- (4) Pulley fixed 3:1
- (5) Rescue seat belt
- (6) Fullbody harness or belt
- (7) Polyamid sheated core rope
- (8) Steel cable with two eyes
- (9) Safety rope with two eyes
- (10) Two carabines
- (11) Alloy carabine
- (12) Carrying box

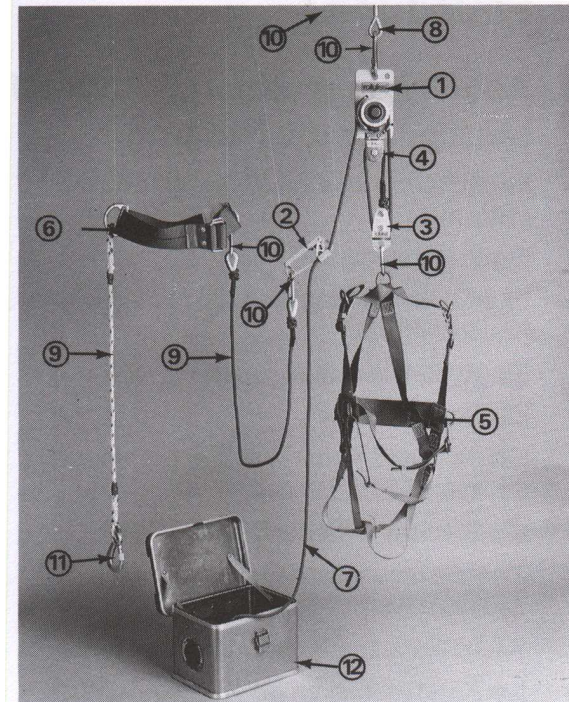


Abbildung 2

2.3. Swiss Rescue Assembly

- (1) Base plate
- (2) Rope drum
- (3) Rope guide bracket
- (4) Rope guide
- (5) Holes for attached pulley
- (6) Hole for carabine
- (7) Fixing to anchor point
- (8) Hole for descending together
With the basic unit

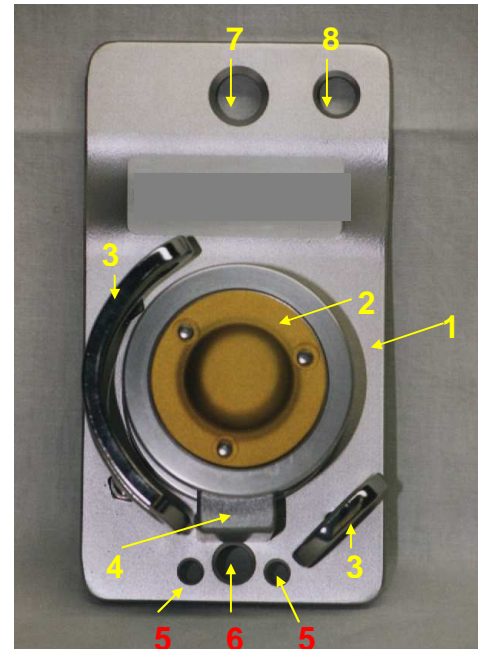


Abbildung 3

2.4. Rope Stopp assembly

- (1) Rope guide
- (2) Locking lever
- (3) Safety bracket
- (4) Handle body
- (5) Eye for carabine
- (6) Pulling rope
- (7) Idle rope

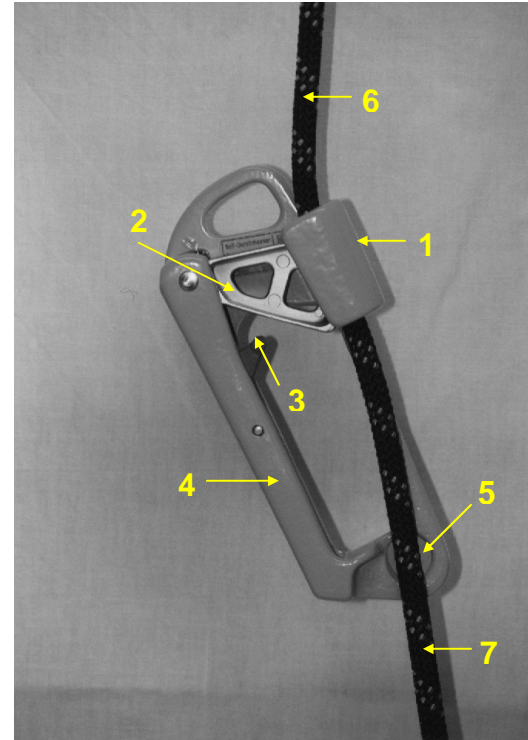


Abbildung 4

2.5. Principle of operation

The Swiss Rescue descending and ascending equipment operates in accordance with the principle of winding contact friction. The friction results from the rope being wound round the rope roller two and half times.

The rope roller can be turned freely counterclockwise and locks in the clockwise direction. Locking is produced by a return movement lock.

The rope roller runs freely during ascent, the return lock is effective when descending.

2.6. Verwendungszweck

Das Swiss Rescue ist zum Auf- Abseilen und als Arbeitsplatzpositionierungsgerät von Personen zugelassen. Dabei gelten die folgenden Richtlinien:

Max. person load	150/250 kg
Min. capacity load of Anchoring point according EN 795:	10 kN
Max. desc. height:	150m ¹⁾
Approved ropes: Only use original Swiss Roll ropes See page 62	
Rope diameter:	9 mm

2.7. Generell conditions

Appropriate, tested original ropes can be purchased only from Swiss Rescue GmbH.

2.8. Training exercises

To ensure safety in use, it is necessary to conduct regular training exercises with the ropes under supervision. The aim is to learn how to handle them safely, initially at low heights with certain increase with growing safety.

During the first training exercise with Swiss Rescue equipment, it is recommended that an additional safety device is provided for the ascending or descending person

3. Inspection of the equipment

3.1. Swiss Rescue

3.1.1. Visual inspection

makes sure that:

- ⇒ the rope roller is clean and free from grease.
- ⇒ the rope roller does not have any grooves worn into it.
- ⇒ the three screws of the rope roller cover are tightened
- ⇒ the rope guides are not distorted
- ⇒ the rope guides are not damaged
- ⇒ the cap nuts on the back are tightened

3.1.2. Functional inspection

Make sure that :

- ⇒ The rope roller locks in the clockwise direction (1) (return motion lock active) Abb. 5.
- ⇒ The rope roller turns freely in the counter-clockwise direction (2) (return motion lock inactive) Abb. 5.

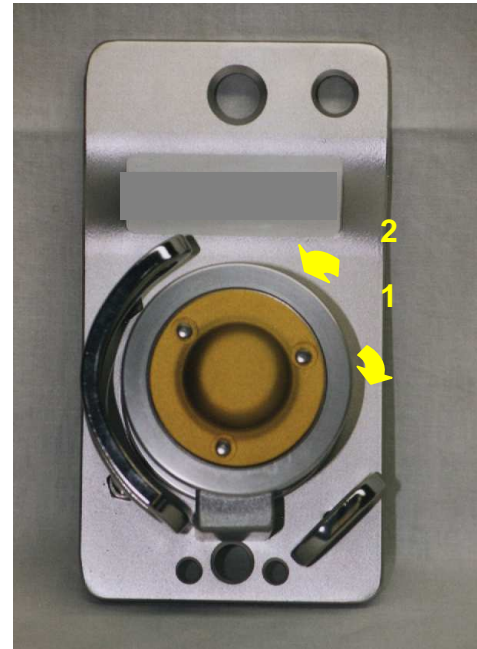


Abbildung 5

3.2. Rope

3.2.1. Visual inspection

Make sure that :

- ⇒ The rope is clean, dry and free from grease.
- ⇒ The rope core is not visible through the sheath.
- ⇒ The rope does not have any damage.
- ⇒ The rope does not have any soft points or depressions.
- ⇒ The shrink cover sleeves of the rope eyes are original and are not damaged.
- ⇒ The rope exhibits no depressions
- ⇒ It is an original Swiss Rescue rope. See technical data ropes. (Yellow/green/golden marking threads)

3.3. Carabines

3.3.1. Visual inspection

Make sure that :

- ⇒ The carabines are not damaged.
- ⇒ The carabines are not bent.
- ⇒ The thread of the knurled screw is clean and undamaged.
- ⇒ The pin of the movable arm is present and is firmly seated.

3.3.2. Functional inspection

Make sure that:

- ⇒ The movable arm is under spring tension .
- ⇒ The knurled screw can turn without resistance
- ⇒ The turn lock returns to the locked position.

3.4. Belts

3.4.1. Visual inspection

Make sure that:

- ⇒ All rivets and screws are firmly seated.
- ⇒ All seams are intact.
- ⇒ The fabric does not show any damage.

3.5. Rope stop unit (Abb. 9)

3.5.1. Visual inspection

Make sure that:

- ⇒ The rope guide is clean and free from grease.
- ⇒ The locking lever (1) and the safety latch are present (2) (Abb. 9).
- ⇒ The locking lever is under spring tension
- ⇒ The pins of the locking lever and the safety latch are firmly seated (3) (Abb. 9).
- ⇒ The teeth of the locking lever are not worn.

3.5.2. Functional inspection

Make sure that:

- ⇒ The locking lever and the safety latch can be moved without jamming
- ⇒ An inserted rope does not slip under tension (4) (Abb. 9).
- ⇒ An inserting rope is released when getting a new grip (push rope stop unit in the direction of the anchor point) (5) (Abb. 9).
- ⇒ The safety latch swings back fully under spring tension from the swivelled out position.

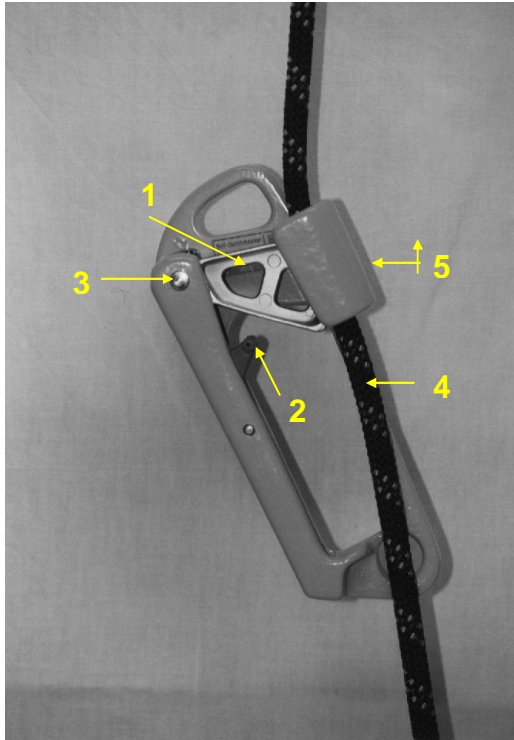


Abbildung 9



Abbildung 10

3.6. Pulley (ES) (Abb. 10 und 11)

3.6.1. Visual inspection

Make sure that:

- ⇒ The rope rollers (1) and (2) are clean and free from grease (Abb. 10 und 11).
- ⇒ The rope contact surfaces are not damaged.
- ⇒ The fastening bolts are present and tight.

3.6.2. Functional inspection

Make sure that:

⇒ The rope rollers (1) and (2) can turn freely and without resistance. (Abb. 10 und 11).

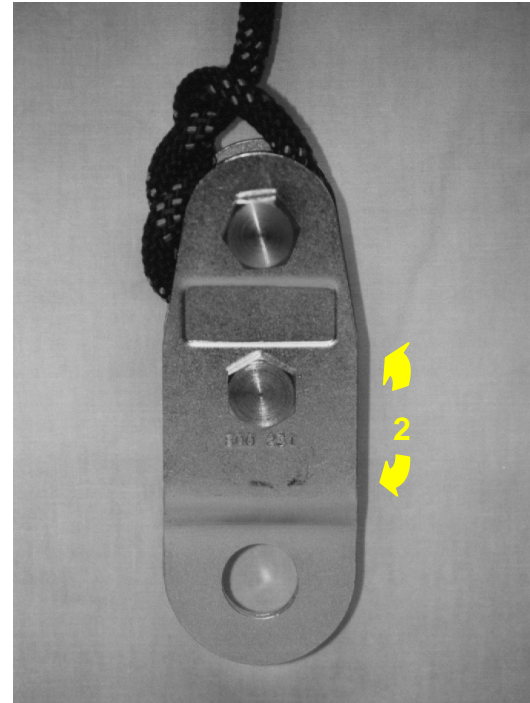
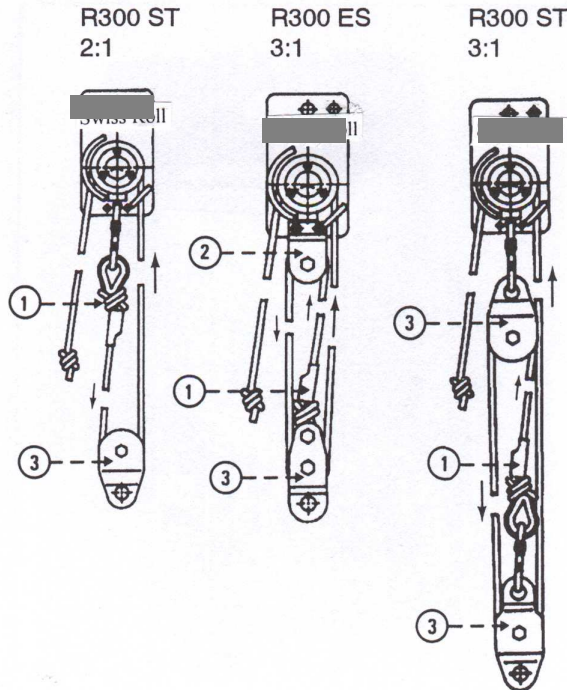


Abbildung 11

4. Operation of the equipment

The operating procedures are made clear on

Pages 20 to 40



Pulley Configuration

4.1. Swiss Rescue

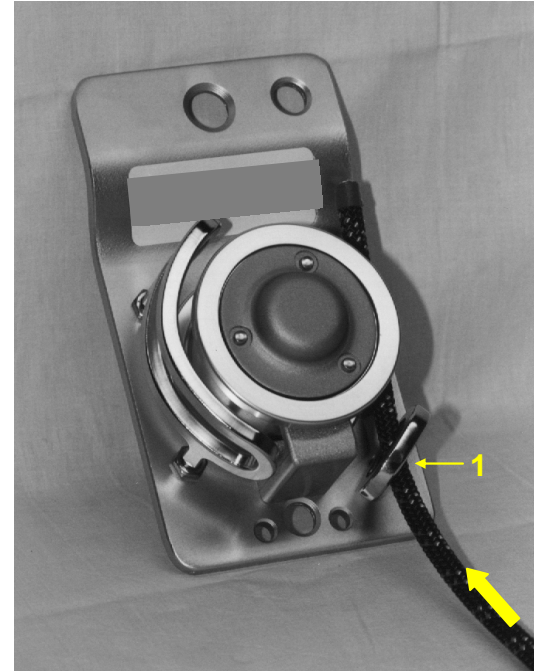
4.1.1. Inserting the rope

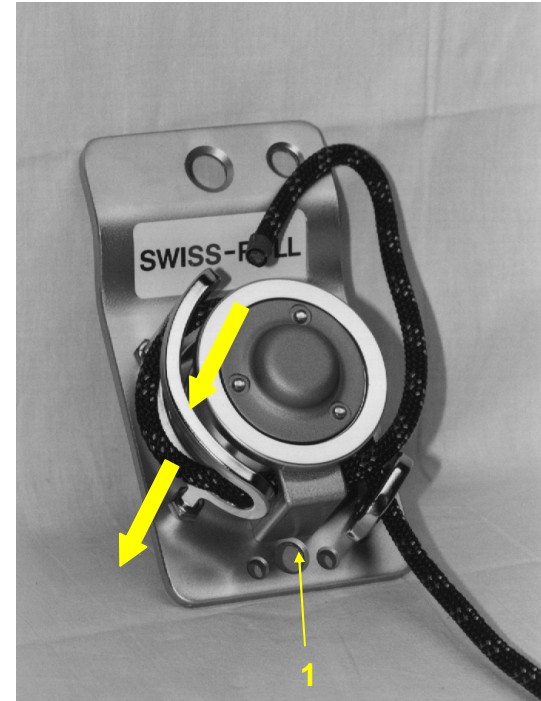
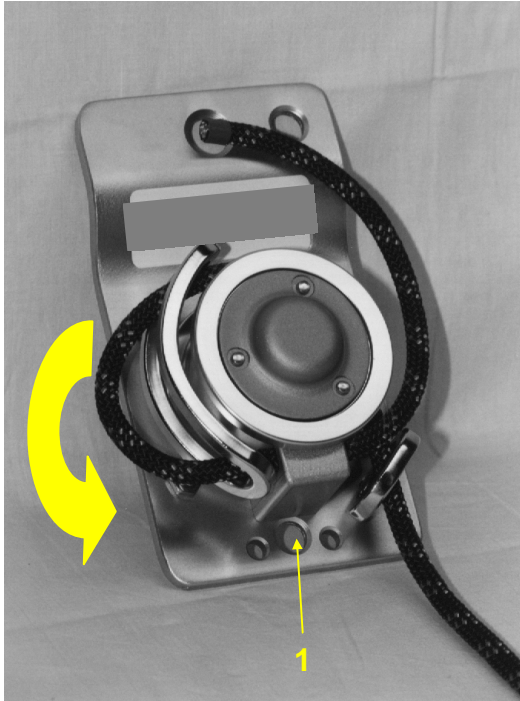
1. If your Swiss Rescue equipment does not include pulleys, go to 2

Your abseiling, rescue and working equipment is basically supplied assembled and ready for use.

The following figures show you how the rope is fitted. However, this operation may only be carried out by an authoriside specialist. SWISS RESCUE does not accept any liability for improper fitting of the rope.

2. Guide the end of the rope which does not have a rope eye from below into the right rope guide in die rechte
2. Wrap it twice around the rope roller. Ensure that the rope runs under the centre rope guide. (1) (Abb. 13 u. 14).
3. Introduce the rope end from the right hand side into the left rope guide
4. **Secure the rope end** (2) through a knot. (Abb. 15).
5. The Swiss Rescue is now ready for use





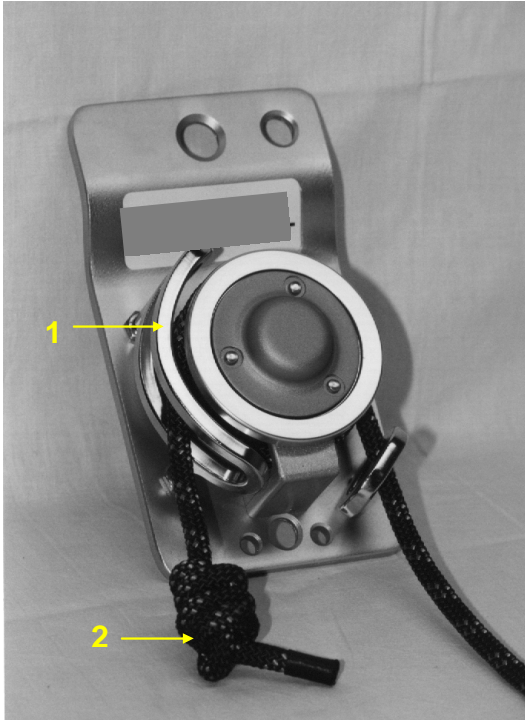


Figure 15

4.2. Carabine

1. When opening the carabine, turn the knurled nut back to the stop.
2. When closing the carabine turn the knurled nut inwards until it is tight; only then is the full load capacity ensured.



4.3. Fixing at the anchoring point

The Swiss Rescue may be fixed to the anchor point in three ways.

1. Direct suspension using carabine at suitable and adequately secure suspension point (Abb. 16).
2. Wrapping (once or several times) around a supporting member using a steel cable and carabine (Abb. 17).

Make sure that the suspension point withstands a minimum load of 10 kN in accordance with EN 795.

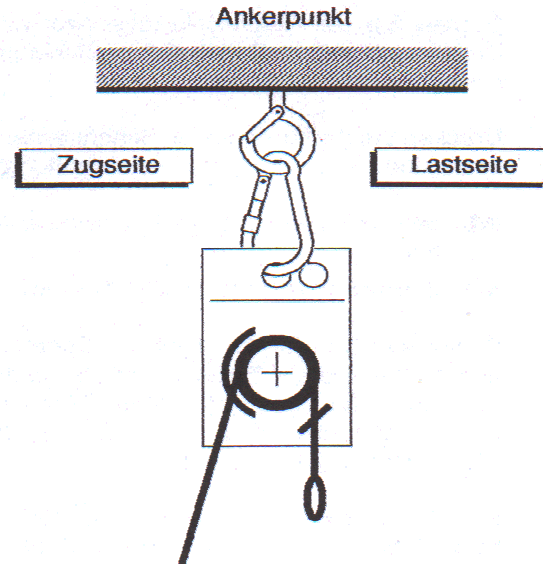


Abbildung 16

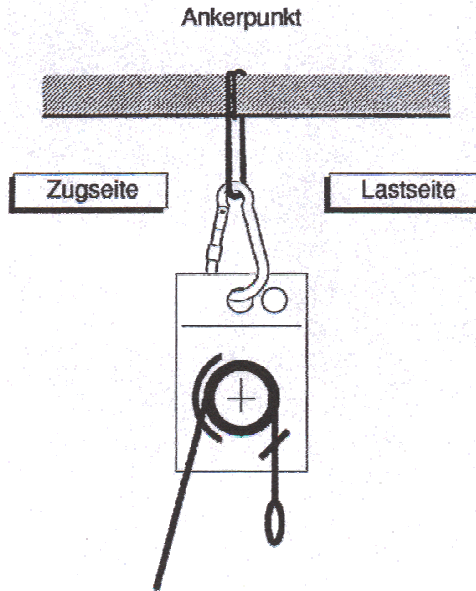


Abbildung 17

Abbildung 18

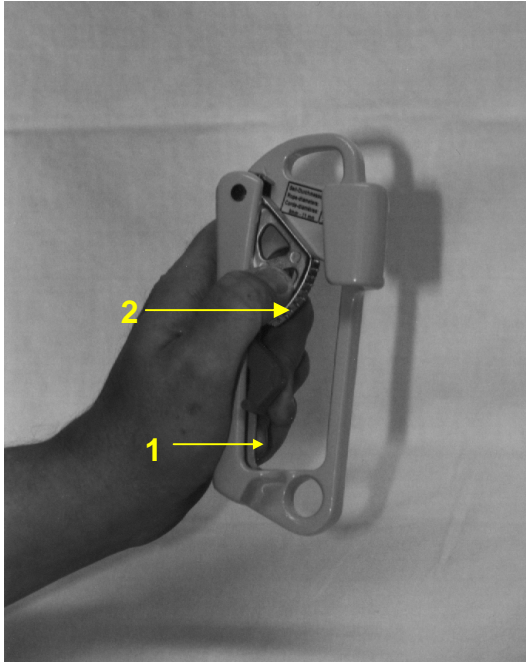
4.4. Belts

4.4.1. Rescue seat belt (standing)



Standing with rescue seat belt donned (Abb. 18)

1. Put the body strap on.
2. Take the leg straps up between the legs and place the two strap rings of the leg straps between the two strap rings of the body strap (Fig.18). Arrange all strap rings as shown in the figure.
3. Insert all the strap rings into the carabine.



de-

Abbildung 19

4.5. Rope stop unit

Important

The following arrangements must be employed in each individual case during use of the Swiss Rescue to secure the rope stop unit!

4.5.1. Inserting the rope

1. Hold the rope stop unit in the left hand as shown at the picture
2. Swing the safety latch (1) completely out of the way with the middle ring finger. Pull the locking lever (2) back with the thumb. (Abb. 19).

3. Insert the rope (Abb. 20).
4. The pulling rope must always enter from above (3),
5. The idle rope must always be at the bottom (4) .
6. Let the locking lever (2) swing back, then the safety latch (1), (FIG. 20)
7. the rope stop unit is now ready for

⇒securing.

⇒ascending.

⇒descending.

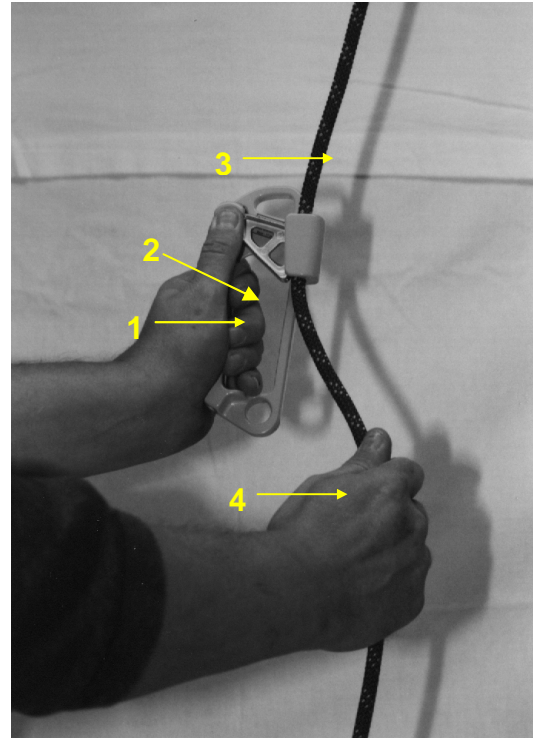


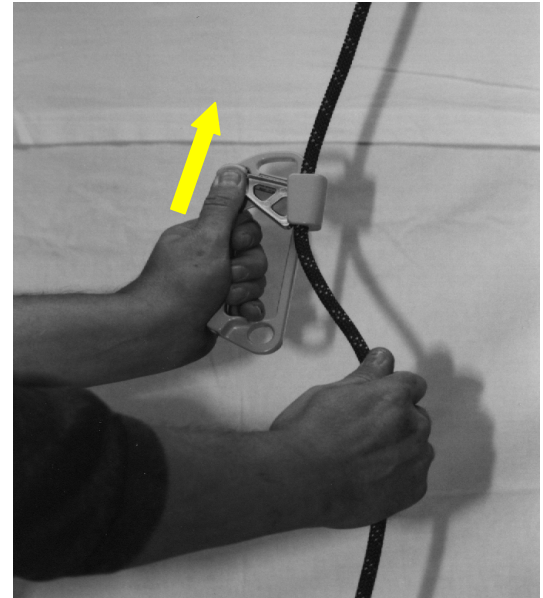
Abbildung 20

4.5.2. Securing: ascending

1. Hold the rope stop unit with the left hand on the handle and with the right hand on the idle rope a little below the rope stop unit (Fig.29)
2. Hold the idle rope under tension with the right hand and push the rope stop unit upwards. This getting a new grip is possible up to the maximum length of the safety rope (Fig21)
3. Pull

⇒ The rope stop unit down using your body weight for someone else to ascend (FIG 22)

⇒ Pull the rope stop unit down using your muscles when ascending yourself (Abb. 23).





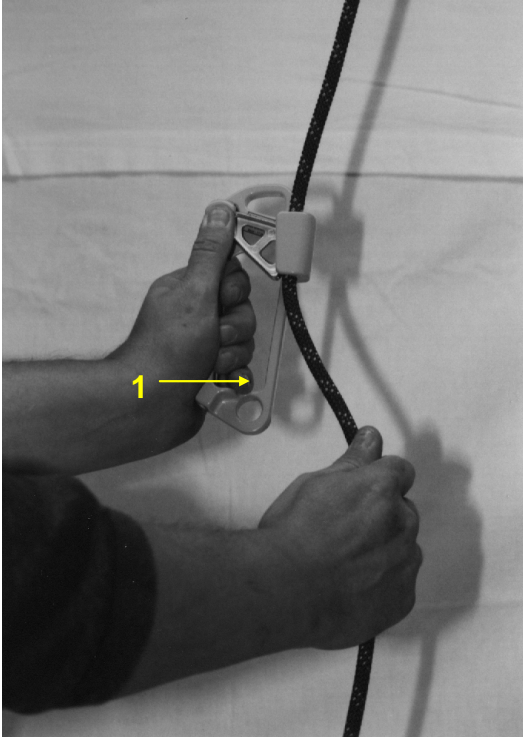


Abbildung 24

4.5.3. Securing: Descending

The person is moved from a higher level to a lower level.

1. Hold the rope stop unit with your left hand on the handle and with the right hand on the idle rope a little below the rope stop unit (Abb. 24).
2. Pull the locking lever (1) back with the thumb and let the idle rope slide under control Ihre rechte Hand gleiten (Abb. 24).

3. **Wichtig!**



Zur sofortigen Unterbrechung
des Abseilvorgangs, Sperrhebel
(1) in jedem Fall loslassen.

4.6. Modes of ascent and descent

Variants 1 to 3 show the rope displacement and load conditions for modes of ascent and descent of the Swiss Rescue equipment.



Variant 1

Advantages:

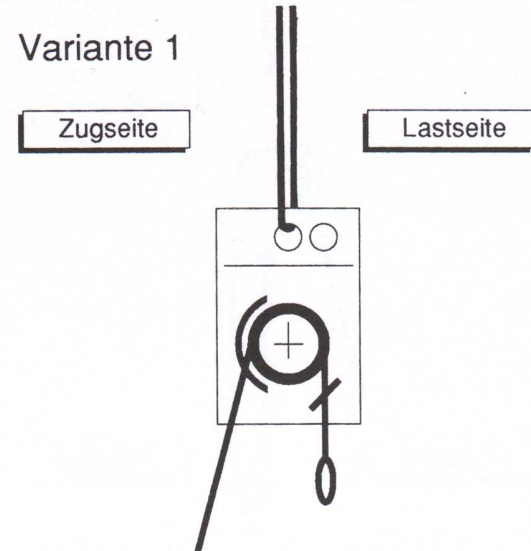
- rapid ascent and descent
- rope displacement on the tension side = displacement of the load

Disadvantage:

- tension force = load

When raising or lowering someone else with the ratio 1:1 (Pulling force = load), note that in each case the securing person must always be heavier than the weight of the abseiling person

Variante 1



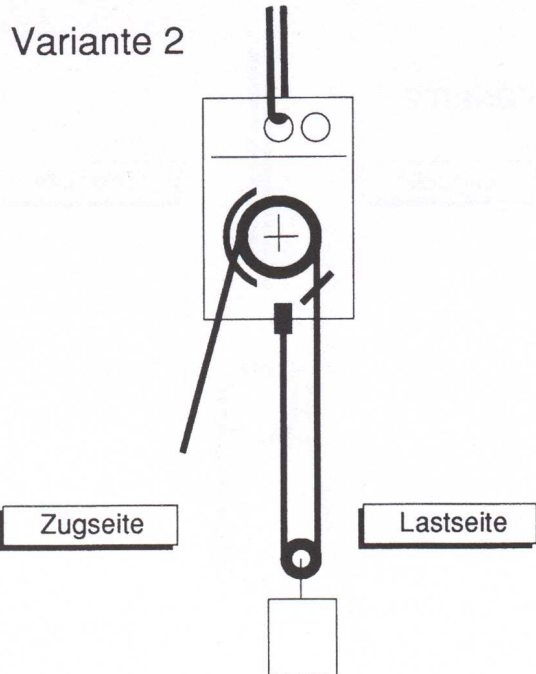


Abbildung 26

Variant 2

Advantages:

- pulling force = $0,5 \times \text{load}$

Disadvantage:

- slower ascent and descent
- rope displacement on pulling side =
2 x displacement of load

Variant 3

Advantage:

- Pulling force = $0,33 \times \text{load}$
- Specially for entry

Disadvantage:

- Slower ascent and descent
- Rope displacement on pulling side =
3x displacement of load

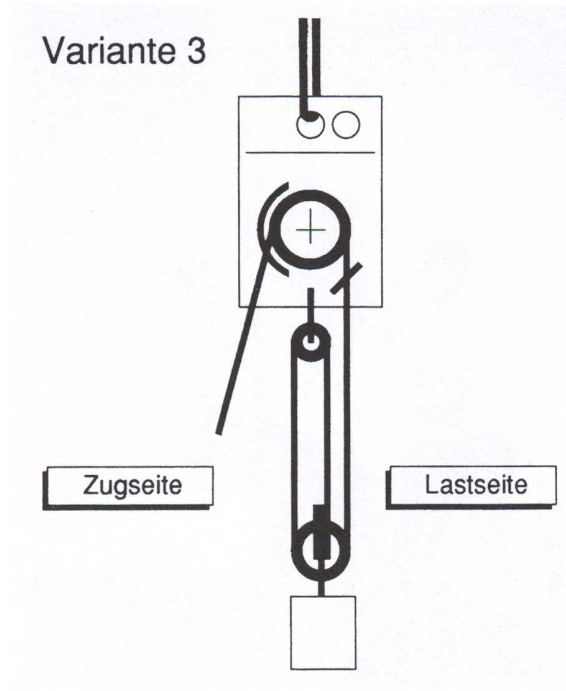


Abbildung 27

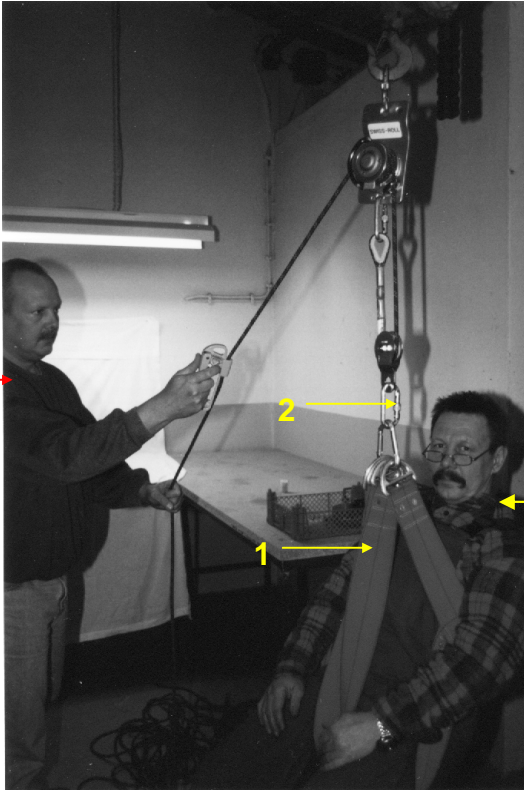


Abbildung 28

4.6.1. External raising and lowering (Abb. 28 und 29)

Suitable for rescue and entry

Number of person required:

Two

1 Person load [P] (3) (Abb. 28)

1 Securing person [S] (4) (Abb. 28)

1. [S] Fix Swiss Rescue Standard at the anchoring point.
2. [S] Don the safety harness.
3. Fasten the carabine of the pulley on your harness.
4. [S] Insert the pulling rope in the rope stop unit.

5.

5.1. For Rescue (Abb. 28)

5.1.1. [S] Put the person being rescued in the seat belt(1) (Abb. 28) and get the rescue seat strap rings ready

5.1.2. [S] Hang the seat strap rings on the load rope carabine(2) (Abb. 28).

5.2. For entry (Abb. 29)

5.2.1. [P] Don the entry belt (1) um (Abb. 29).

5.2.2. [S] Hang the load rope carabine on the entry harness (2) (Abb. 29)

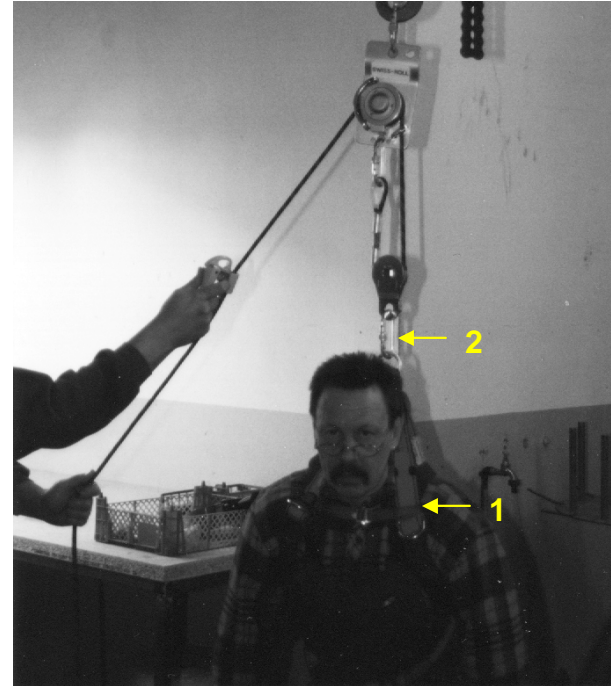


Abbildung 29

[S] You are ready now for raising and lowering

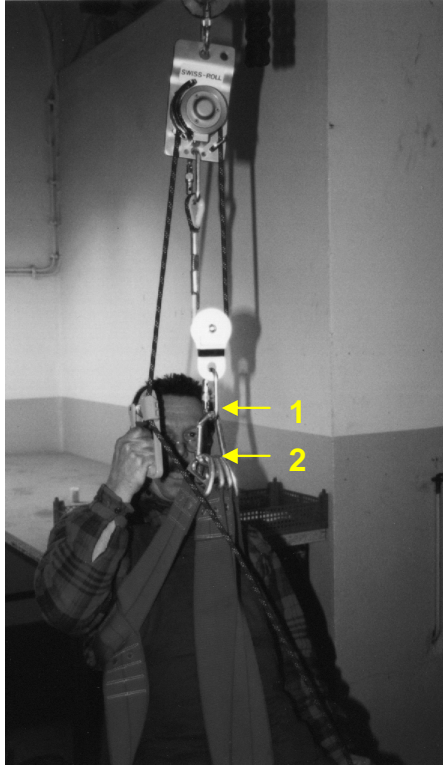


Abbildung 30

4.6.2. Self raising and lowering (Abb. 30 und 31)

Suitable for rescue or entry

Number of person required:

One

(Personload and securing person are identical.)

1. Fix the Swiss Rescue Standard at the anchoring point

2.

2.1. For rescue (Abb. 30)

2.1.1. Hang the seat harness rings on the load rope carabine (1) (Abb. 30).

2.1.2. Hang the carabine of the rope stop unit (2) on the load rope carabine (Fig. 30)

2.1.3. Insert the pulling rope in the rope stop unit.

2.1.4. Get into the rescue seat belt .

2.2. For entry (Abb. 31)

2.2.1. Don the entry belt (FIG.31)

2.2.2. Hang the carabine of the rope stop unit on the entry belt (1) (Abb. 31).

2.2.3. Insert the pulling rope in the rope stop unit.

2.2.4. Hang the load rope carabine on the entry belt ring (2) (Fig.31)

You are ready now for raising and lowering .

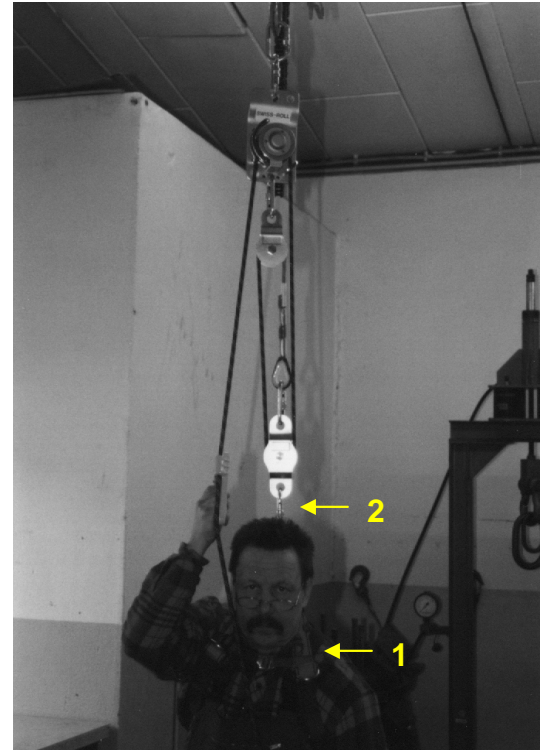


Abbildung 31

4.6.3. Working positioning

It is only permissible to use a Swiss Rescue equipment for work with the addition of a second securing line! (Abb. 32)

Important:

The same procedure applies for all modes of use of a Swiss Rescue equipment: for immediate interruption of a descent, let go the locking lever on the rope stop unit (Abb. 19)

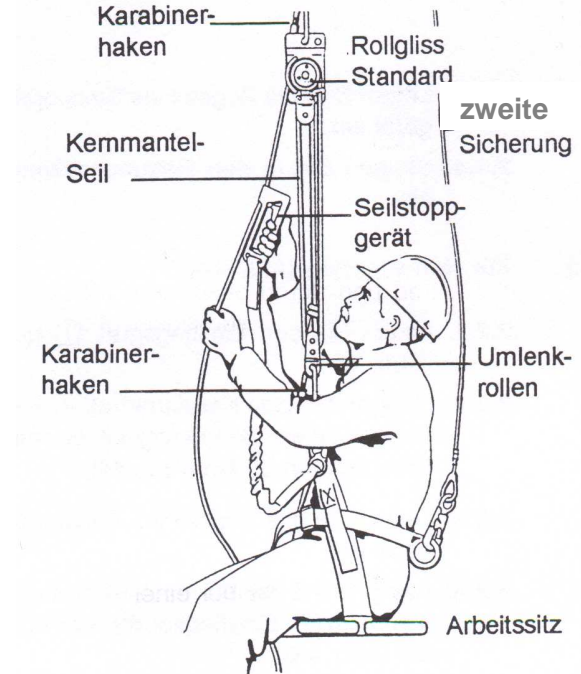


Abbildung 32

5. Maintenance

5.1. Swiss Rescue

The Swiss Rescue does not require any maintenance apart from the visual inspections described.

The bearings are permanently lubricated and are specially from dirt and moisture.

Under no circumstances may the Swiss Rescue be taken apart!

☐ Inspections as required by instructions

The Swiss Rescue must be returned immediately for inspection when there is any visible or suspected wear, but at latest **(even when no wear or deterioration is**

detectable) 10 years after the date of purchase.

- ☐ **Inspection due to ageing in storage**
Even when it has not been used, the Swiss Rescue must be returned immediately for inspection when damage in storage is detected or suspected, but at latest (even when no damage in storage is detectable) 10 years after the date of purchase.

4. **Inspection and any repairs and the replacement of ropes may only be carried out by Swiss Rescue GmbH or Swiss Roll. Otherwise no liability is accepted**

We do not automatically remind you of an inspection or rope replacement.

5.2. Ropes

Special attention must be paid to the cleanliness and ageing of ropes when carrying out maintenance on ropes

☐ Cleaning of dirty ropes

Dirt on and inside ropes accelerates their wear. Normal dirt from use (soil, sand, dust etc.) can be flushed out by washing with clear, hand hot water. Ensure that the lime content of the flushing water is as low as possible-ideally decalcified(distilled) water should be used.

So-called decalcifiers must not be used

Extreme dirt from use (oile, grease, clay, etc.) must be washed out with a washing agent suitable for rope fibres (obtainable from Swiss Rescue GmbH). Dry the rope under standard conditions (20 C, 65% relative humidity),in shade, in a breeze, not on radiators, not in a drier.

☐ Replacement because of ageing due to use or storage

Whether used or not, the rope must be replaced immediatelyby Swiss Rescue GmbH Swiss Rescue when damage is detected or suspected- but in any case after 10 years the date of purchaseor 750.000 kgm of abseiling service.

☐ Replacement of ropes may only be carried out by Swiss Rescue GmbH Swiss Rescue. Otherwise no liability is accepted.

We do not automatically remind you of rope replacement

5.3. Inspection logbook Swiss Rescue

Purchase	Equipmentno: _____
	Date: _____
	Signature: _____

Delivery	Date: _____
	Signature: _____

Work carried out

Date

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

5.4 Logbook „Ropes“

Kauf Art.-Nr. _____ Seillänge _____ Datum _____ Unterschr. _____	Kauf Art.-Nr. _____ Seillänge _____ Datum _____ Unterschr. _____	Kauf Art.-Nr. _____ Seillänge _____ Datum _____ Unterschr. _____	Kauf Art.-Nr. _____ Seillänge _____ Datum _____ Unterschr. _____
Inbetriebsetzung Datum _____ Unterschr. _____	Inbetriebsetzung Datum _____ Unterschr. _____	Inbetriebsetzung Datum _____ Unterschr. _____	Inbetriebsetzung Datum _____ Unterschr. _____
Austausch Datum _____ Unterschr. _____	Austausch Datum _____ Unterschr. _____	Austausch Datum _____ Unterschr. _____	Austausch Datum _____ Unterschr. _____

6. Storage

6.1. Swiss Rescue

The following storage requirements must be observed:

- ⇒ Dry and clean storage location.
- ⇒ No extreme temperature fluctuations differing from normal ambient temperature (20°C).
- ⇒ No effects of oil and grease.
- ⇒ No effect of aggressive media such as acids or alkalis or their vapours
- ⇒ No effects of engine exhausts.
- ⇒ Storage only in Swiss Rescue light alloy case or in Swiss Rescue plastic bag.

6.2. Ropes

The following storage requirements must be observed:

- ⇒ Dry and clean storage location.
- ⇒ No UV irradiation, choose dark storage location.
- ⇒ No effects of oil and grease.
- ⇒ No effects of aggressive media such as acids or alkalis or their vapours
- ⇒ No effect of engine exhausts.
- ⇒ Storage only in Swiss Rescue light alloy case or in Swiss Rescue plastic bag.
- ⇒ No mechanical effects such as loading by weights, crushing, walking on ropes.

⇒ Regular check on stored ropes.

⇒ Always store ropes loose, i.e. never roll because of risk of twisting.

7. Spezifikation

Complete Equipment

Weight: ca. 10 kg

Swiss Rescue

Max. descent height: 150m
 Max. Personload: 150 kg
 Rope diameter: 9 mm
 Tested: EN 341, Klasse A
 + EN 1496B
 Approved: CE 0408
 Unloaded weight 1,9 kg
 Material: Aluminium-alloy

Typ nos: 800.300.000

Rescue seat or rescue triangle

Material: PA
 Art.Nr.: 801.800.500

Light alloy case

Material Aluminium

Carabine

Material Steel,galvanised

Pulleys (fixed and revolving)

Material Steel,galvanised

Rope stop unit

Material Aluminium-
 Magnesium-
 Legierung
 Colour coated
 Art.Nr. 801.800.260
 (left hand)
 801.800.261
 (right hand)

Ropes

Description	„Dynastat Longlife“
Type	Standard-rope for Generell use
Artikel Nr.	801.720.000
Material	Polyamid
Colour	blue
Diameter	9 mm
Construction	core sheated
Weight	52 g pro Meter
Rupture force	Over tension head d = 180mm: $F_{\max} = 20.000 \text{ N}$ Over tension Knot $F_{\max} = 18.000 \text{ N}$
Strain approx.ca.	6% bei $F = 1500 \text{ N}$

Function of pulley

The pulleys help to reduce tension forces. The following table shows which configuration is recommended.

Note:

With a transmission ratio of 5:1 and an abseiling height of more than 20m, the rope entry (PVC bag) should always be at the top. If this is not possible, one winding should be removed from the rope roll. However, this only applies from a transmission ratio of 3:1 and 5:1 and may only be carried out by an authorised specialist.

Number of person	Ratio	Personload	Recommended	
			Yes	No
1 Person ascending and desc.	1:1	150 kg		X
1 Person ascending and desc.	2:1	150 kg	X	
2 Person ascending	2:1	Max. 250 kg		X
1 Person ascending and desc.	3:1	150 kg	X	
2 Person ascending and desc.	5:1	Max. 250 kg	X	

8. Information

Beratung und Verkauf

THE ORIGINAL
 **swiss rescue** [®]
SYSTEMS

Steinstraße 1
56593 Göllesheim
Telefon 0 26 87 / 92 88 0
Telefax 0 26 87 / 92 88 20
info@swiss-rescue.de
www.swiss-rescue.de

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