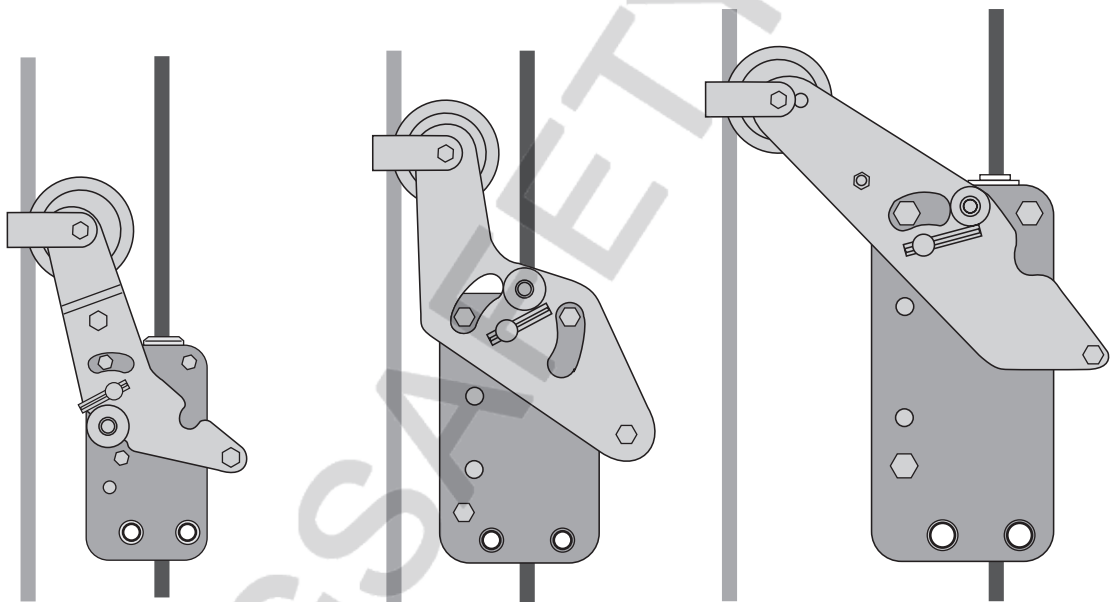


blocstop[®]

Fall arrest device

Original Operating Instructions



BSA 15-301

**BSA 20-303
BSA 20-330**

BSA 35-505

This instruction manual must be available for the user at all times
Additional copies may be obtained on request.



A member of TRACTEL Group






Contents

	Page		Page
Information for this manual	2	4. Operation	
Explanation of symbols used	3	4.1 Checks before starting and daily checks	9
1. Safety Advice	3	4.2 Weekly checks of wire rope and cable	9
2. Machine Description		4.3 Service Operation	9
2.1 Purpose	4	4.4 Action in the event of operation of the fall arrest device	10
2.2 Working principle	4	5. Troubleshooting	10
2.3 Allowed BLOCSTOP® wire rope for man-riding	4	6. Maintenance	
2.4 Technical data	5	6.1 BLOCSTOP® maintenance	11
2.5 Typical example	5	6.2 Checks	
2.6 Residual risks	5	6.2.1 Essential checks	11
3. Setting up		6.2.2 Safety inspection	11
3.1 General	6	6.3 Repair	11
3.2 Required equipment	6	7. Spare parts	
3.3 Installation of the fall arrest device		7.1 BLOCSTOP® fall arrest device	12
3.3.1 Evidence of carrying capacity	6	7.2 Nameplates and labels	12
3.3.2 Dimensions	6		
3.3.3 Anchoring the fall arrest device	7		
3.4 Wire rope installation			
3.4.1 Preparing the rope	8		
3.4.2 Lifting rope installation	8		
3.4.3 Safety rope installation	9		

Information for this Operating and Maintenance Manual

<p>Date of edition 1. Edition: August 2000</p> <p>Copyright The copyright of these assembly and operating instructions shall remain with the manufacturer.</p>	<p>Address of the manufacturer: GREIFZUG Hebezeugbau GmbH Scheidtbachstraße 19-21 51469 Bergisch Gladbach Germany Telefon: +49 / 22 02 / 10 04-0 Telefax: +49 / 22 02 / 10 04-50 or -70</p>
<p>For addresses of other TRACTEL Group Companies contact GREIFZUG GmbH.</p>	

Explanation of symbols used

Safety advice			
Symbol	Code word	Meaning	Possible consequences of non-compliance
	DANGER	IMMEDIATE or possibly imminent danger:	Fatal or serious injuries!
	CAUTION	Possibly dangerous situation:	Injuries to persons or damage to property.
Other advice			
	Attention	Possibly dangerous situation:	Damage to appliance or its surroundings.
	Important	Useful tips for optimum working:	None
Directions			
	(without code word)	Instruction to operation/ documentation in writing.	

1. Safety advice



Follow all instructions and safety regulations contained in this manual to avoid injuries.

- a) BLOCSTOP® fall arrest devices are designed for installation in “Suspended access equipment (SAE)”.
- b) Anchoring, maintenance, and/or the operation of a BLOCSTOP® fall arrest device must only be done by persons, who are familiar with it. Employees must have received the instruction to anchor, maintain, and/or operate the hoist by their employer.
- c) They must be familiar with the relevant accident prevention regulations e.g. “Hoists, lifting and pulling devices”, “load carrying devices in hoist operation”, “safety requirements on suspended access equipment (EN 1808)” etc. and have been instructed accordingly.
They must have read and understood the assembly and operating instructions prepared by the manufacturer of the SAE.
- d) If more than one person is entrusted with one of the above mentioned activities, the manufacturer of the SAE must designate a supervisor who is authorised to give instructions.
- e) Only BLOCSTOP® fall arrest devices, ropes, anchoring devices in good condition must be used.
- f) The **BLOCSTOP® fall arrest device must be assembled on the SAE.**
- g) Before starting with the assembly, please check that all parts are complete and defect-free.
- h) Anchor BLOCSTOP® fall arrest device so that the lifting or safety ropes are vertical.
- i) Only anchor BLOCSTOP® fall arrest device at the points provided for this purpose (connection rods, anchor points, or load pins).
- k) When using self-locking nuts please observe the following:
 - the screw must **protrude from the nut** with at least half of its thread diameter;
 - **do not re-use nuts** if they can be unscrewed by hand!
- l) **DO NOT** overload the BLOCSTOP® fall arrest device.
- m) Use only the prescribed rope in perfect condition. Use only normally commercially available multi-purpose greases for the required lubrication of the rope. Do not use any lubricants containing disulphide (e.g. Molycote®).
- n) When using a rope other than the prescribed rope, the warranty entitlement given by GREIFZUG Hebezeugbau GmbH or other company of the TRACTEL Group shall not apply.
- o) Checks and repairs must only be performed by GREIFZUG Hebezeugbau GmbH, other company of the TRACTEL Group or a hoist workshop.
- p) GREIFZUG Hebezeugbau GmbH or an other company of TRACTEL Group shall assume no liability for damage as a result of conversions and alterations to the devices supplied by itself or as a result of the use of non-original parts.

2. Machine description

2.1 Purpose

BLOCSTOP® fall arrest devices

BSA 15-301, BSA 20-303, BSA 20-330, and BSA 35-305

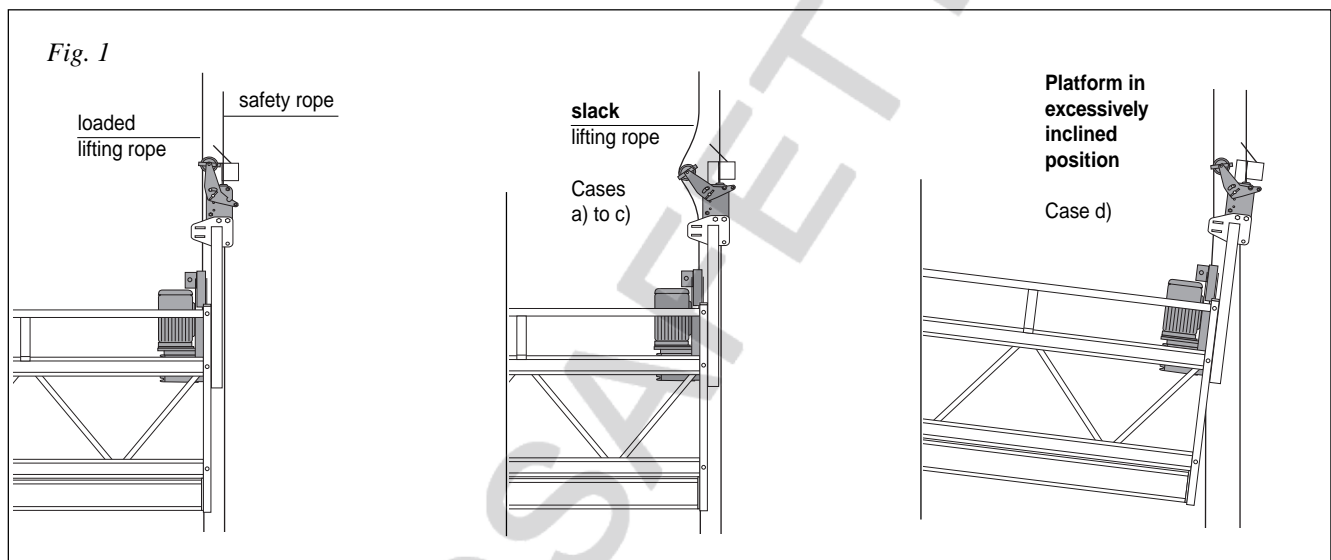
are intended to hold the load (e. g. a suspended platform) on the secondary safety wire rope in case of

- a) lifting wire rope rupture;
- b) hoist failure;
- c) the suspended scaffolding interlocking or becoming caught during downward travel with the result that the lifting rope is no longer under tension;
- d) inclined position of more than 14° of the suspended platform with two hoists attached at the ends.

2.2 Working principle

BLOCSTOP® fall arrest devices of the BSA type are running on a secondary safety wire rope and opened as long as the lifting wire rope of the hoist is under tension (Fig. 1).

When closed, the BLOCSTOP® fall arrest device holds the load by means of two clamping jaws, known from the TIRFOR® machines.



2.3 Allowed BLOCSTOP® wire rope for man-riding

for BLOCSTOP®-Model	Wire-rope-Ø
BSA 15-301	8 mm
BSA 20-303	9 mm
BSA 20-330	10 mm
BSA 35-305	14 mm

Identification: one red strand.

Diameter indication on the ferrule:

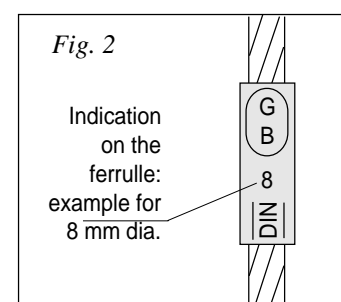
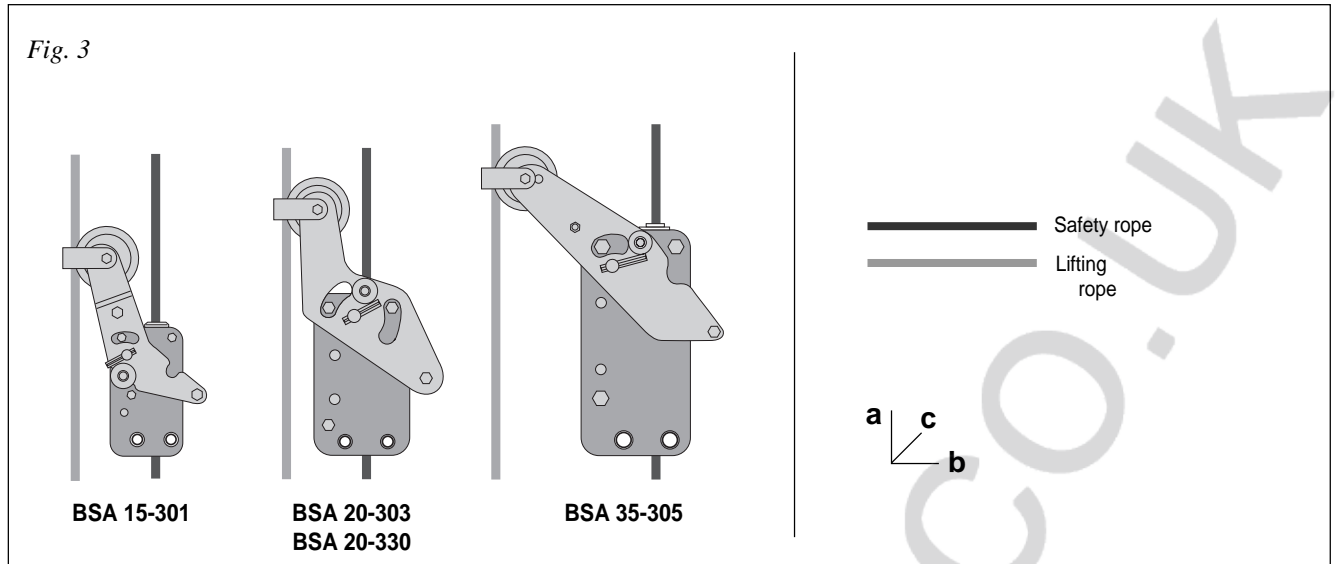


Table 1

2.4 Technical Data

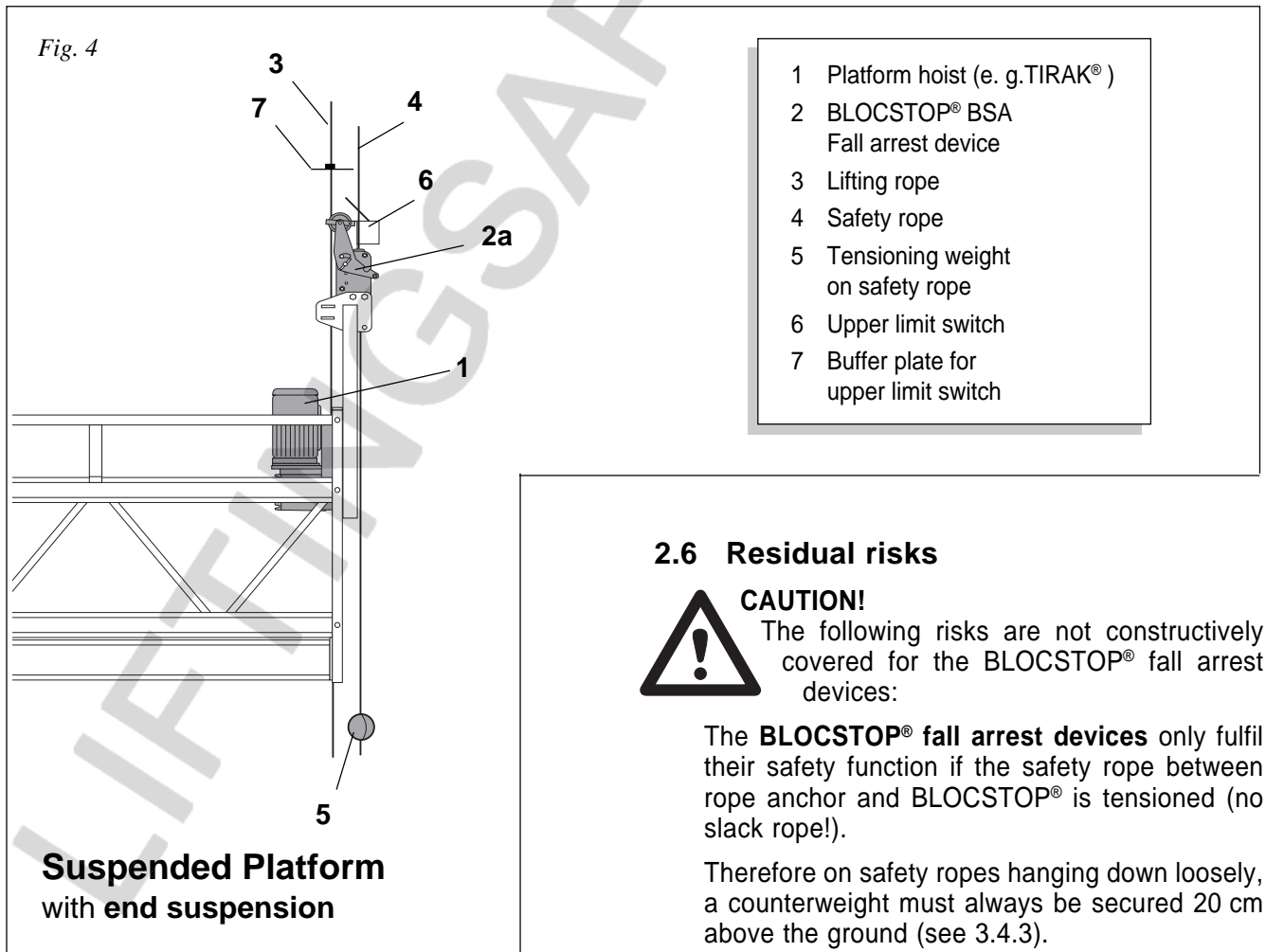


Fall arrest device	Capacity	for max. wire rope speed	TIRAK® Rope Ø	Dead weight approx.	Dimensions		
					a	b	c
BLOCSTOP® Model	kg ¹⁾	m/min	mm	kg	mm	mm	mm
BSA 15-301	500	–	8	4	286	191	76
BSA 20-303	800	–	9	6	350	222	76
BSA 20-330	1000	–	10	6	350	222	76
BSA 35-305	2000	–	14	10,5	395	313	90

Table 2

2.5 Typical Example

(Schematical Drawing)



3. Setting up

3.1 General

The manufacturer of a suspended access equipment is responsible for ensuring that the device, including the suspension construction, conforms to the applicable standards.

3.2 Required equipment

- a) Fall arrest device(s), e.g. BLOCSTOP® machine(s) with at least the same capacity as the hoist(s) in use.
- b) Wire rope with correct diameter and of sufficient length. Also multi-purpose grease to lubricate the rope
- c) Pulleys for diverting or reeving the wire rope of sufficient strength and diameter.

Check condition of all components.

3.3.2 Dimensions

Dim.	Dimensions in mm for BLOCSTOP® BSA		
	BSA 15-301	BSA 20-303/330	BSA 35-305
a	286	350	395
b ₁	191	222	313
b ₂	269	324	370
c ₁	34	37	53
c ₂	75	75	90
d	91	121	140
e	42.5	55	60
f	14	25	28
g	20	19.5	22
Ø h	12.1	12.1	22.2
S	100	100	200

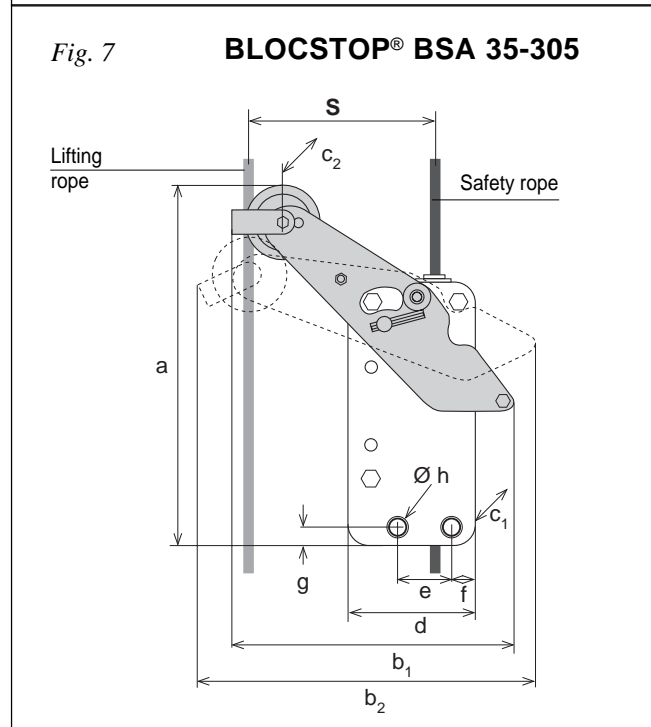
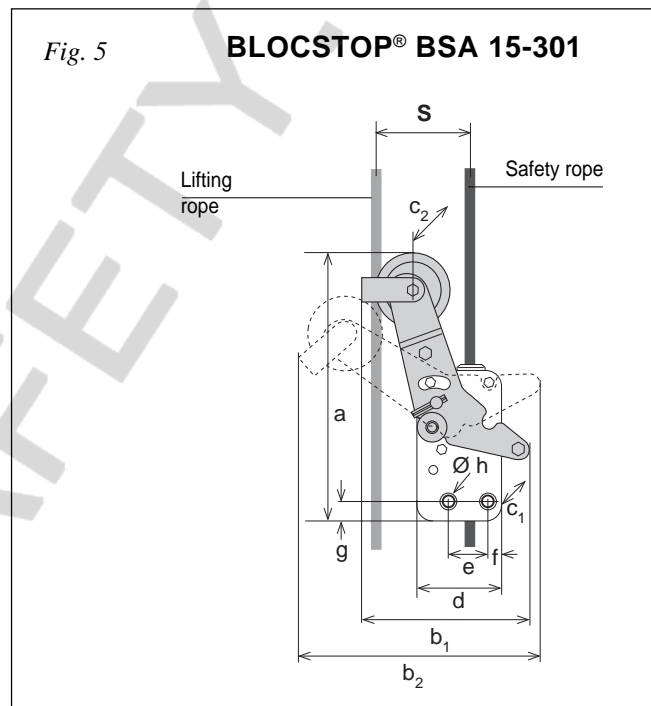
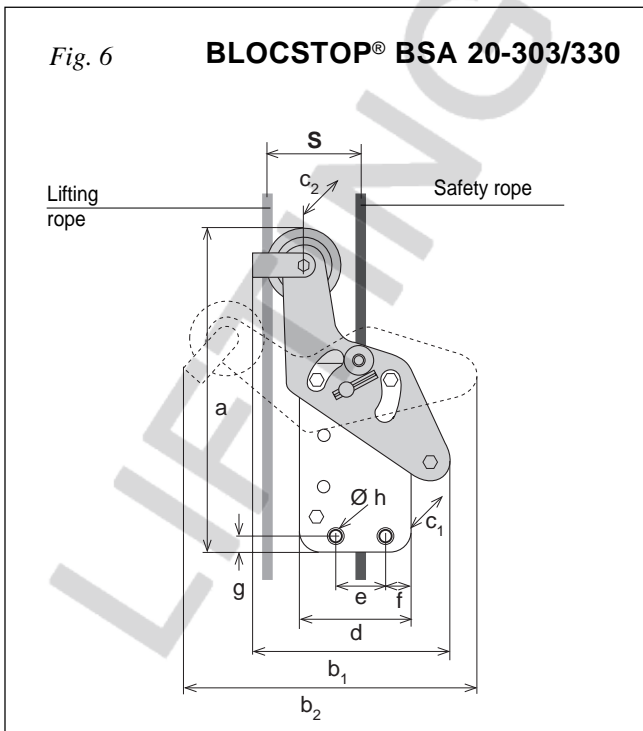
Table 3 c₁ = Casing breadth; c₂ = Breadth over all

3.3 Installation of the fall arrest device

3.3.1 Evidence of carrying capacity

The construction for hanging the safety rope as well as the component to which the BLOCSTOP® fall arrest device is anchored must have **at least four times the carrying capacity** (against rupture) of the BLOCSTOP®.

This is necessary in order to cope with the dynamic load in the event of fall arrest.




3.3.3 Anchoring the BLOCSTOP® BSA...

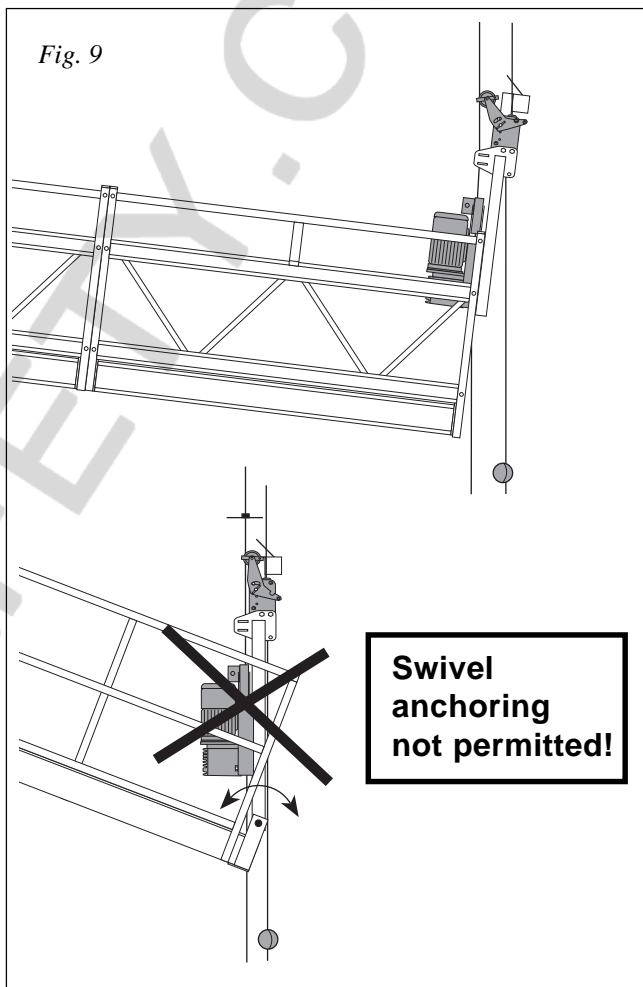
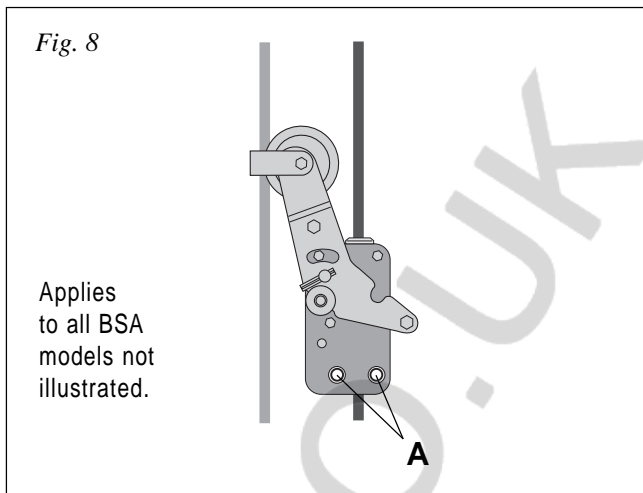
- Anchor the BLOCSTOP® device to both anchor points (A) in such a manner (fig. 8) that there is
**10 cm interval (S) BSA 15/20... or
 20 cm interval (S) BSA 35-305
 between safety rope and lifting rope**
 (fig. 5 to 7).
- The component to which the BLOCSTOP® type BSA... is anchored must be connected rigidly to the suspended access equipment. Otherwise the BLOCSTOP® cannot function as an inclination limiting device (fig. 9).

Anchoring devices


BSA 15-301 / 20-303 / 20-330:
M12x... screws, at least grade 8.8 with self-locking nuts;

BSA 35-305:
M22x... screws, at least grade 8.8 with self-locking nuts;
 or **bolts** or similar **with at least the same strength**.





Attention!

 Protect BLOCSTOP® devices against dirt!
 Take appropriate action for ensuring that no debris is carried into the BLOCSTOP® by the rope.

This applies in particular **during work with air-placed concrete or with synthetic resin coatings or similar!**

Deposits of this nature can lead to malfunction which endangers work safety!

3.4 Wire rope installation

3.4.1 Preparing the wire ropes



CAUTION!

Use gloves, when handling wire ropes.

- a) Use only **wire ropes specified by the manufacturer**.
- b) Check **correct diameter** (Fig. 10) and **sufficient length** of the wire rope.
- c) Always **unreel** the wire rope **in a straight line** (Fig. 11), to prevent it from becoming unusable because of loops.
- d) Check the **rope condition** for damage:
 - proper connections (thimble, ferrule); on wire ropes with hook: hook is not bent, safety catch is in place (Fig. 12);
 - the wire rope has no visible damage along its total length; the fused and tapered end is according to Fig. 13.

Attention!

Never use the BLOCSTOP® wire rope for fixing a load!



Never let the wire rope rub over sharp edges!

Always ensure a **clear rope exit!**

Always keep it **lightly lubricated!**

Use normally commercially available multi-purpose grease; **do not use** lubricants containing disulphide (e.g. Molycote®).

Important!



If the anchoring point for the rope is **above** the BLOCSTOP® device, **first anchor the rope** and then insert into the BLOCSTOP® device.

Fig. 10

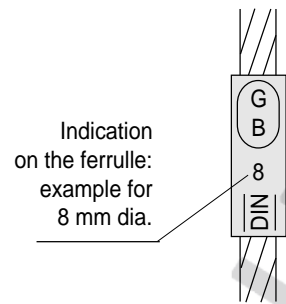


Fig. 11

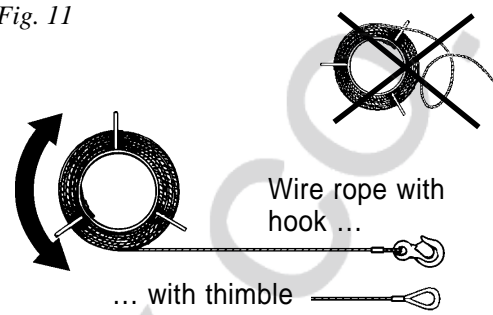


Fig. 12

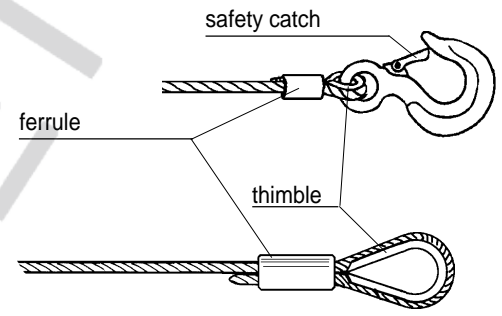


Fig. 13

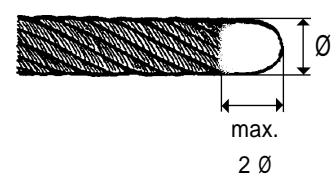
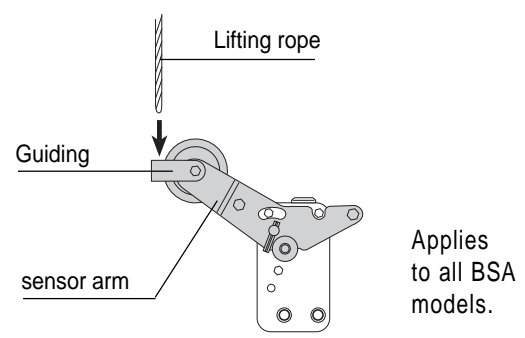


Fig. 14



3.4.2 Lifting rope installation

Attention!



Before installing the lifting rope into the hoist, insert the rope end between roll and rope guide of the sensor arm from above (fig. 14)!

3.4.3 Safety rope installation

- a) The safety rope must hang free alongside the lifting rope.
- b) Open BLOCSTOP® (Abb. 15):
 - push sensor arm (A) upwards by hand if it is not already raised by the tensioned lifting rope.
- c) Place safety rope through the fall arrest device from above and pull taught by hand.
- d) Anchor **counterweight** to the safety rope approx. 20 cm above the ground (fig. 16):
 - 11.5 kg for BSA 15-301 / 20-303 / 20-330;
 - 2 x 11.5 kg for BSA 35-305

4. Operation

4.1 Checks before starting and daily checks

- a) Check correct anchoring of BLOCSTOP® fall arrest device to the suspended access equipment.
- b) Check BLOCSTOP® fall arrest device.



DANGER!

It must not be possible to pull the safety rope upwards when the BLOCSTOP® fall arrest device is closed.

BLOCSTOP® models BSA...

- The fall arrest device closes automatically if the lifting rope is not tensioned e.g. when the suspended access equipment is set on the ground (fig. 17).

If the safety rope can however still be pulled upwards, replace BLOCSTOP® and send to the supplier for checking.

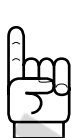
4.2 Weekly checks of wire rope



DANGER!

Damaged wire ropes endanger operational safety!

Therefore examine **lifting and safety ropes** in accordance with section 6.2.1 on page 10 for damage which requires replacement.



Attention!

Lubrication: Keep the wire rope lightly lubricated. This will not affect the gripping power but will prolong the life of wire rope to a maximum.

Check all **power supply and control cables** and if necessary replace.

Fig. 15

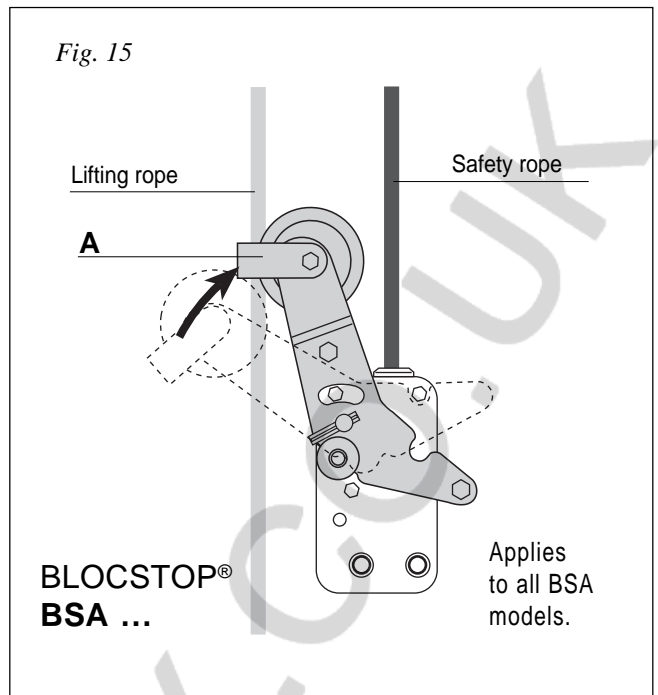


Fig. 16

Counterweight

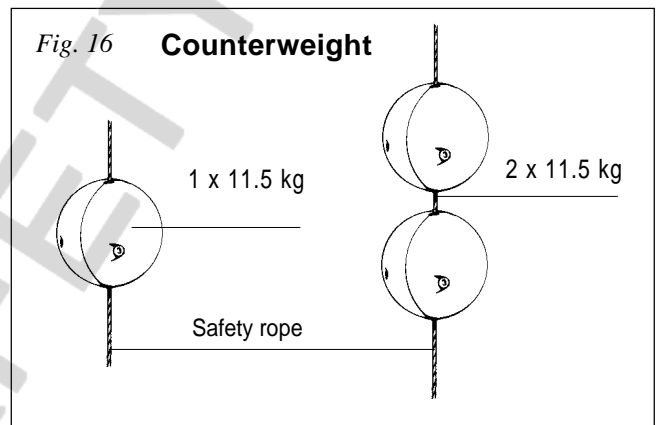
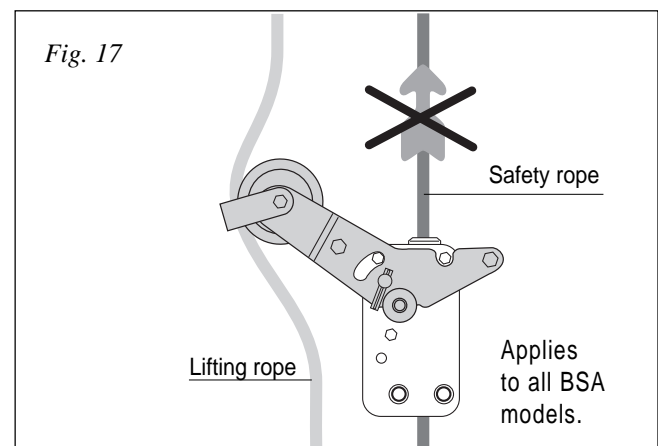


Fig. 17



4.3 Service Operation



CAUTION!

Do not move the hoist UP with closed BLOCSTOP® fall arrest device!

The safety rope would be pushed up and would no longer be taught between suspension and BLOCSTOP®, which would dangerously extend the fall distance in the event of a fall arrest.

4.4 Action in the event of operation of the fall arrest device

A) DANGER!



In the event of **rupture of the lifting rope** or **failure of the hoist**, evacuate the crew of the man-riding equipment.

In the event of operation of the fall arrest device the suspension of the safety rope and the connection between BLOCSTOP® and suspended access equipment are submitted to dynamic loads.

Before resuming normal operation **carry out checks as per section 5.1!**

B) In the event of **interlocking/becoming caught** during downward travel so that the lifting rope is no longer under tension (only on BLOCSTOP® models BSA...),

in the event of **inclined position** of more than 14° (only on BLOCSTOP® models BSA... on platforms with two hoists attached to the ends):

- release the safety rope by moving the suspended access equipment upwards – in the event of inclined position, only the lower end.

- In the event of a power failure move upwards in manual operation, if the hoist is equipped with this feature.
- The fall arrest device BLOCSTOP® BSA... is automatically re-opened by the tensioned lifting rope (fig. 18).

Attention!

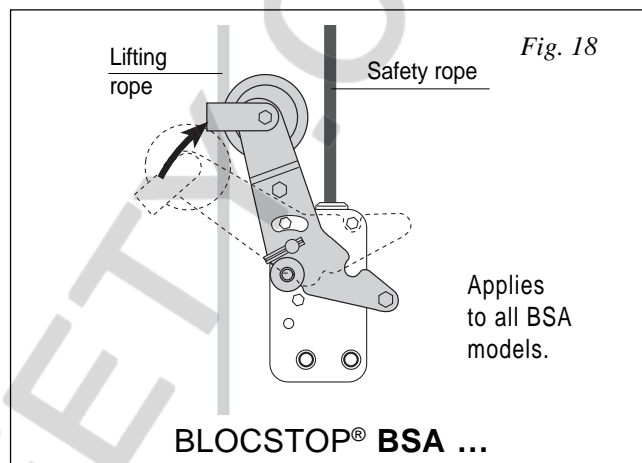


When the suspended access equipment is on the ground again, **check the fall arrest device operation as per section 4.1 on page 9.**



CAUTION!

Replace defective BLOCSTOP® devices and send for repair by the manufacturer or by a hoist workshop.



5. Troubleshooting



WARNING!
Avoid injuries:

Checks and repairs should only be carried out by the manufacturer (or Group company) or by a qualified person, and only original spare parts shall be used.

Breakdown	Cause	Remedy
<p>Platform moves up but not down</p>	<p>STOP DANGER! Thoughtless behaviour endangers the safety of the installation!</p> <p>BLOCSTOP® fall arrest device holds the platform on the safety rope.</p> <ul style="list-style-type: none"> a) Lifting rope rupture b) Failure of the hoist c) Platform becoming caught (with BLOCSTOP® BSA...) d) Inclined position of the platform (with BLOCSTOP® BSA...) <p>STOP DANGER! Defective BLOCSTOP® fall arrest devices endanger the operational safety of the installation! They must be replaced as a matter of urgency!</p>	<ul style="list-style-type: none"> a) + b) Evacuate platform and follow the instructions in section 4.4 above. c) Move upwards until the loaded lifting rope opens the BLOCSTOP®. d) Move lower platform end upwards until the loaded lifting rope opens the BLOCSTOP®.

Should these steps not explain the cause and provide a remedy please contact GREIFZUG Hebezeugbau GmbH, other TRACTEL Group company, or a hoist workshop.

6. Maintenance

Deadline (Performer)	Test item	Regulations	Details on page
Each working day: (Supervisor)	Anchoring parts BLOCSTOP® fall arrest devices	Safety requirements on suspended access equipment EN 1808	၇၇ ၇၇
Each working week: (Supervisor)	Wire ropes	VBG 9a, DIN 15020, part 2	၇၇
Annually (qualified person)	BLOCSTOP® fall arrest devices	EN 1808 (see above)	၇၇

6.1 BLOCSTOP® maintenance

The BLOCSTOP® fall arrest device does not require any special maintenance.

Always keep the mechanism **clean** and **lightly lubricated**, e. g. with GREIFZUG® oil or motor oil. Too much oil is never bad – this will not affect the gripping power.

6.2 Checks

6.2.1 Essential checks

a) General

Prior to every operation
and

during operation make sure, that

- the BLOCSTOP® fall arrest device,
- and all other used equipment (anchoring devices, pulleys etc.)

are properly installed

and

without visible damage

Attention!



If **during operation** damage appears:

- **STOP operating**,
- if necessary: **cord off the danger zone**, and
- have the **damage removed** by a qualified person!

b) Nameplates and labels

Make sure that all nameplates and labels are in place and not obscured (see section 7.2, page 12).

Replace missing labels and those which are not legible!

c) Wire ropes

Attention!



Replace wire ropes, if one of the following defects is determined **during** the prescribed **weekly check**:

- **8 or more wire breaks** on a length which corresponds to 30 times the rope diameter.
- Heavy **rust formation** on the surface or inside.
- **Heat damage**, recognisable through discoloured wires.
- **Reduction of the diameter** by 5% or more compared with the nominal diameter.
- **External damage** to the rope like “pig-tail” curls, kinks, birdcages, or loop formations.

These **examples** do not however replace the **DIN 15 020, folio 2 reference for wire rope checks!**

6.2.2 Safety inspection

Attention!



Following a fall arrest, a qualified person must check the operational safety of the BLOCSTOP® fall arrest device including anchor points, as well as the safety rope and the rope anchoring.



It is the responsibility of the employer that a **written register is kept** showing the **dates, period of use, and inspection record**.

6.3 Repair

Repair of BLOCSTOP® fall arrest devices must only be carried out **by the manufacturer** (or Group company), or by a **qualified person** and **only original spare parts** shall be used.

7. Spare Parts

7.1 BLOCSTOP® fall arrest device

As well as the **spare part number** and **description** please always quote

- **BLOCSTOP® model**
- **wire rope diameter** and
- **serial number.**

7.2 Nameplates and labels

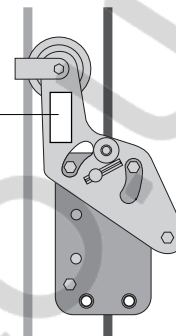
Make sure that all nameplates and labels are in place and not obscured (see fig. 19).

Replace missing labels and those which are not legible!

Spare parts lists are available
from your supplier
or from the manufacturer.

Fig. 19

BLOCSTOP® BSA ...
nameplate



BLOCSTOP Abfangsicherung

Typ:
Für Seil-Ø:
Max.Traglast:

Sauber halten.
Oft und reichlich
schmieren.

GREIFZUG Hebezeugbau GmbH · D-51469 Berg. Gladbach