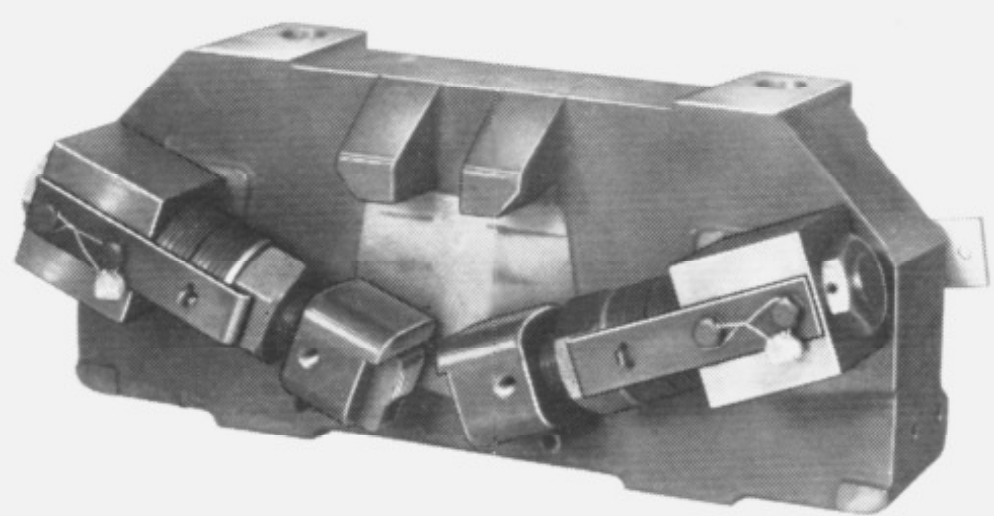
SASSI LIFT SYSTEMS

SLC

Product information

300.000.023
Version 01.2009

Progressive safety gear BF66-2



Braking downwards

Authorised Distributor for UK

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Lizenz Herstellt in Lizenz der C. Haushahn GmbH & Co. KG

Table of contents

1. Safety instructions

This product information refers to the progressive safety gear type BF66-2 and contains important information on correct and safe installation, putting into service, use and maintenance of the safety gear. Observing these instructions helps to avoid danger, to reduce repair costs and downtimes and to increase the reliability and life of the safety gear.

The product information has to be supplemented by instructions based on national rules and regulations concerning accident prevention.

The product information must always be available wherever the safety gear is in use. The manual must be read and applied by any person in charge of carrying out work with and on the safety gear.

In addition to the product information and to the mandatory rules and regulations for accident prevention in the country and place of use of the safety gear the generally recognized technical rules for safe and proper working must also be observed.

1.1 Designations and signs

The following designations and signs are used in this product information to designate instructions of particular importance:

DANGER

in this manual refers to the risk of death, heavy injuries and extensive damage if the required prevention measures are not taken.

WARNING

in this manual refers to light injuries or damage if the required prevention measures are not taken.

IMPORTANT

in this manual refers to important information about the product or is meant to attract the readers attention to important parts of the product information.

1.2 Principle / intended use of the safety gear

The safety gear has been built in accordance with current standards and the recognized safety rules. Nevertheless, its use may constitute a risk to life and limb of the user or cause damage to the safety gear and to other material property.

The safety gear must be operated in technically perfect condition only, in accordance with its intended use and with the instructions set out in this product information.
Any functional disorders, especially those affecting the safety of the safety gear should therefore be rectified immediately.

The safety gear BF66-2 is designed exclusively for preventing the fall of the lift car. Using the safety gear for purposes other than those mentioned above is considered contrary to its designated use.
The manufacturer cannot be held liable for any damage resulting from such use.
The risk of any misuse lies entirely with the user.

Operating the safety gear within the limits of its designated use also involves observing the instructions set out in this manual and complying with the inspection and maintenance directives.

Never make any modifications, additions or conversions that might affect safety without the supplier's approval!

Spare parts must comply with the technical requirements specified by the manufacturer. Spare parts from original equipment manufacturers can be relied to do so.

Adhere to prescribed intervals for routine checks and inspections!

For the execution of maintenance work tools and workshop equipment adapted to the task on hand are absolutely indispensable.

1.3 Selection and qualification of personnel / basic responsibilities

Any work on and with the safety gear must be executed by reliable personnel only. Statutory minimum age limits must be observed!

Employ only trained and instructed staff and set out clearly the individual responsibilities of the personnel for operation, set-up, maintenance and repair!

Make sure that only authorized personnel works on or with the safety gear!

1.4 Safety instructions governing assembly and specific operational phases

Assembly

Always wear personal protective equipment during assembly work.

Standard operation

Avoid any operational mode that might be prejudicial to safety!

Take the necessary precautions to ensure that the safety gear is used only when in a safe and reliable state!

Main-tenance

Ensure that the maintenance area is adequately secured!

For carrying out overhead assembly work always use specially designed or otherwise safety-oriented ladders and working platforms. Wear a safety harness when carrying out maintenance work at greater heights!

Before cleaning with water or detergents cover or tape up all openings which - for safety and functional reasons - must be protected against water or detergent penetration.
After cleaning remove all covers and tapes applied for that purpose!

Always tighten any screwed connections that have been loosened during maintenance and repair!

Ensure that all consumables and replaced parts are disposed safely and with minimum environmental impact!

Gas dust steam smoke

Carry out welding or grinding work on the safety gear only if this has been expressly authorized, as there may be a risk of explosion and fire!

Before carrying out welding or grinding operation, clean the safety gear and its surroundings from dust and other inflammable substances and make sure that the premises are adequately ventilated (risk of explosion)! When there is little space for working observe the national rules and regulations!

Oil grease etc.

When handling oil, grease and other chemical substances, observe the product-related safety regulations!

Be careful when handling hot consumables (risk of burning or scalding)!

2. General notes

The safety gear BF66-2 is a single-sided acting safety device for lifts.
It prevents the car from falling downwards.
The safety device is a type-examined element.

2.1 Designation

BF.. - .	**B**rems**F**angvorrichtung (= progressive safety gear)
66	construction type
- 2	type

2.2 Advantage-Gain-Argument

Feature	Advantage	Gain
Safety gear	❖ Prevents inadmissible excess of car speed in the event of intact suspension means and unfavourable loading ❖ Prevents free fall of the car in the event of broken suspension means	❖ Reduces the residual risk
Default setting at works	❖ Exact setting ❖ Reduced assemby time	❖ Cost saving
Pulling rod can be fixed to either brake shoe	❖ Reduced assemby time	❖ Universally applicable
4 braking arms	❖ symetrical wear of brake shoes	

2.3 Criteria for the selection of safety gears

Rail head width Load of safety operation P+Q Counterweight mass Car speed				
Guide rail	→	machined	→	dry oiled
	→	drawn	→	dry oiled

2.4 EC type-examination certificate

Certification no. of the EC type-examination certificate:

Type	Certificiation no.
BF66-2	AFV 265/2

2.5 Manufacturer of the safety gear

Manufacturer of the safety gear (under licence of C. Haushahn GmbH & Co. KG)

SLC Sautter Lift Components GmbH & Co. KG

Borsigstraße 26

70469 Stuttgart I Germany

Holder of the type-examination certificate:

C. Haushahn GmbH & Co. KG

Heilbronnerstraße 364

70469 Stuttgart I Germany

IMPORTANT

EC type-examination certificates plus certificates of conformity are added to the delivery separately.

In addition the EC type-examination certificates can be downloaded on the homepage of SLC: www.slc-liftco.com

3. Technical Data

3.1 Boundary conditions

- The device is a progressive safety gear.
- Braking is a metal abrading operation.
- The device is installed on the lift car.
- Connection to the car with screws M16.

3.2 Dimensions

	Installation dimensions			
Type	weight (pair)	height	width	depth
BF66-2	30 kg	140 mm	478 mm	130 mm

3.3 Range of application

	Machined rails		Drawn rails	
	dry	oiled[1]	dry	oiled[1]
Min. width of running surface	20 mm			
Rail head width	9 - 16 mm			
Max. rated speed [m/s]	1,50			
Max. load braking downwards P+Q [kg]	842 - 3.440	775 - 3.440	770 - 2.815	806 - 2.953
Max. rated speed [m/s]	3,23			
Max. load braking downwards P+Q [kg]	842 - 2.688	775 - 2.688	770 - 2.422	806 - 2.422

Maximum tripping speed of the overspeed governor and range of maximum rated speed:

Max. tripping speed [m/s]	1,50	3,23
Max. rated speed [m/s]	1,0 - 1,30	2,5 - 2,81

[1] the indications for oiled guide rail refer to use of mineral oils without additive (for example lubricant C according to DIN 51517, Part 1).

3.4 Tripping

Below the minimum tripping force required to trip the safety gear:

Type	Braking downwards
BF66-2	120 N

The maximum admissible tripping force required at the safety gear shall not exceed 1600N.

The individually needed tripping force has to be ascertained at the lift, considering all components.

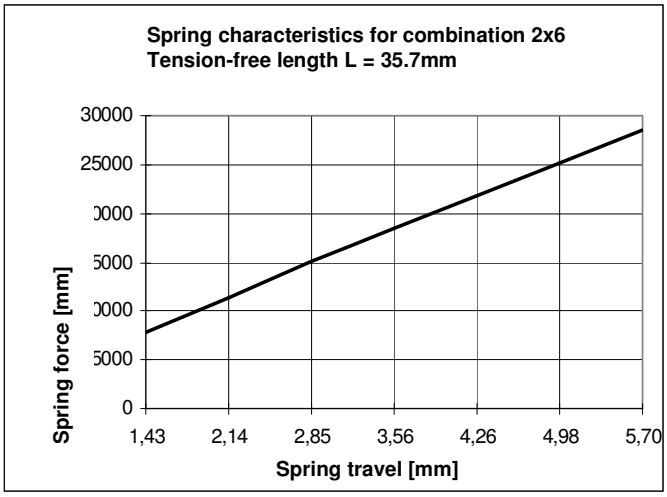
Standard EN 81 rules that for the tripping of safety gears twice the required tripping force has to be available.

3.5 Compression stress of springs

The following diagrams show the compression stress of the disk springs depending on the length of the spring assembly:

Spring characteristic for combination 2x 6

Tension free length L = 35,7 mm



3.6 State of delivery

The safety gear is adjusted in the factory to the following lift specific characteristics:

- Mass of lift car (P)
- Mass of payload (Q)
- Mass of compensation ropes
- Rated speed of the lift car
- Rail head width (9 – 16 mm)
- Manufacturing mode of rails (machined, drawn)
- Surface condition of rails (dry, oiled)

The setting is secured against alterations by the manufacturer by means of a seal.

DANGER

Wrong setting of the safety gear can result in falling-down of the lift.

The safety gear is adjusted by the manufacturer. As the deceleration depends on different, partially lift-specific factors (material of guide rail, surface hardness of the rail, …) a precise pre-adjustment can not be guaranteed.

If a setting correction is exceptionally required, the setting has to be carried out only by specially trained personnel after consultation with the manufacturer. The new setting has to be secured against unauthorized alterations by means of a seal.

WARNING

The manufacturer cannot be held liable for damages caused by unauthorized setting alterations.

WARNING

Before installing the safety gear on the lift car its type plate characteristics have to be compared with the lift characteristics. The type plate is mounted on the safety gear.

The safety gear must only be applied within the permission scope of application: see EC type-examination certificate “Scope of application”, certificate no. see chapter 2.4.

IMPORTANT

The safety gear is set at work according to values specified in the order form for safety gears to obtain the required braking force.

The order form is included in the annexe of this product information.

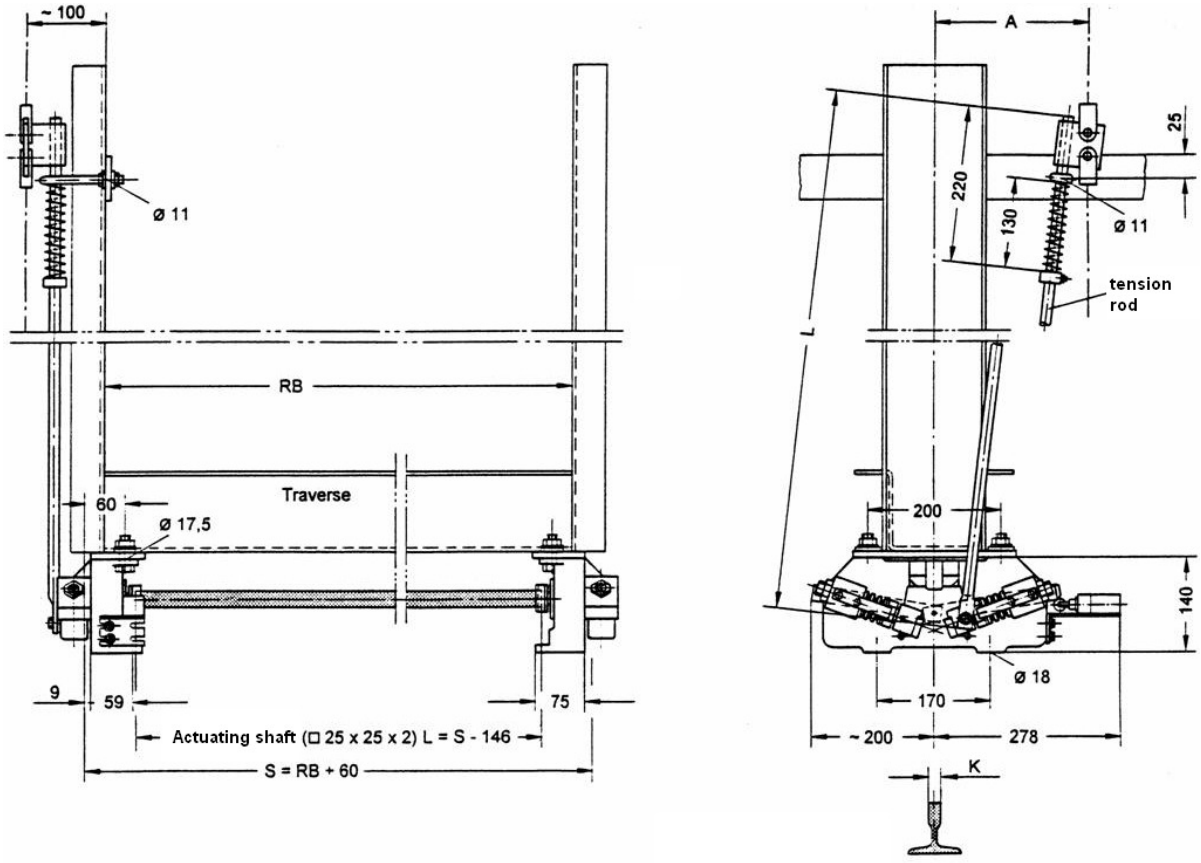
In addition the order form can be downloaded on the homepage of SLC: www.slc-liftco.com

4. Mounting and dimensions

4.1 Mounting of the safety gear

BF66-2

- Tripping with tension rod



S = depth gauge

RB = frame width

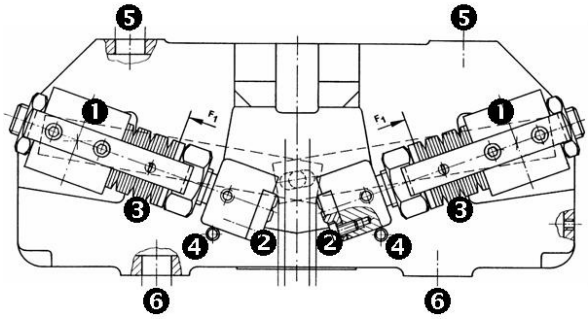
Lenght of tension rod [L] 625 mm resp. 2920 mm

Actuating shaft (tube 25x25x2) not included

- Fixing of tension rod L=625mm, A_{max} = 200mm
- Fixing of tension rod L=2920mm, A_{min} = 200mm, A_{max} = 500mm

5. Specification and function

5.1 Specification of the safety gear



❶ brake arms
❷ brake shoes
❸ disk spring package
❹ lower stop pins
❺ bore holes on top
❻ lower bore holes

5.2 Function of the safety gear

Upon tripping of the overspeed governor in down direction the brake arms ❶ are lifted upwards to horizontal position.

The brake shoes ❷ are touching the guide rail surface and are forced into by the disk spring package ❸.

The braking effect is achieved by cutting into the rail surface, friction and spring tensioning work.

By moving the lift car into the direction opposite to the braking direction the safety gear is rest. The brake wedges fall back to the lower stop pins ❹.

The safety gear is ready again.

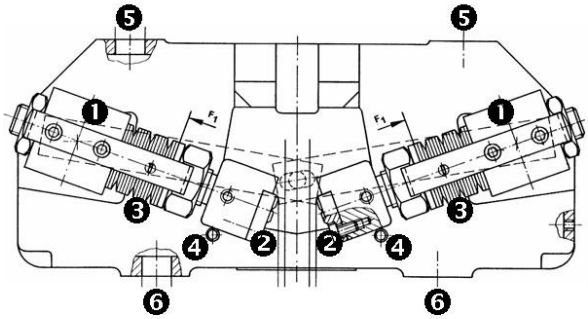
IMPORTANT

The position of all 4 brake arms (positively synchronized) is monitored via a positive-action switch and the control cams at the connecting shaft.

The safety gear transfers braking forces to the lift car. Be aware of the braking forces in interface design (see chapter 3.3).

6. Assembly

6.1 Assembly of the safety gear to the lift car



The safety gear is fixed to the lower traverse at the two bore holes ∅ 18 ❺ on top.

At the two lower bore holes ∅ 18 ❻ the guide shoe is fixed.

The position of the safety gear to the guide rail is adjusted such, that all 4 brake shoes have the same distance from the rail (3.7 mm).

WARNING

For adjusting the following has to be observed:

The braking surfaces must be completely covered by the rail running surface. The distance between the rail running surface and the brake shoe is adjusted to 3.7 mm.

The safety gear has to be installed such that the brake arm with the spring supported brake shoe is aligned parallel to the rail and in travelling direction, thus preventing an uneven braking trace.

WARNING

The BF66-2 requires an accurate alignment of the safety gear, the brake-arms and the brake shoes in relation to the guide rail as otherwise the braking track may be getting out-of-line owing to the braking effect.

For fault-free lift operation and complete functioning it is extremely important that the safety gear is perfectly aligned.

Einbaulage der Bremseinrichtung

Upon installation the mounting position of the safety gear has to be oberved.

Mounting to the car is possible however always the mounting area on top has to be used (the mounting area below shall be used only for the installation of the guide shoes).

IMPORTANT

The two safety gear units at a lift car are connected by a connecting shaft. To synchronize the two units a square tube 25 x 25 x2 mm, length 146 mm is used.

IMPORTANT

Engagement of the governor rope / braking linkage is possible at either brake shoe resp. at the left or right brake arm.

IMPORTANT

The progressive working safety gear BF66-2 can be used as a protection against inadvertant lowering.

7. Commissioning

7.1 Functional check

WARNING

Prior to commissioning the safety gear

- in connection with an overspeed governor check whether this one functions properly, if the safety gear is connected to the overspeed governor and if the generated tractive force corresponds with twice the force required for engaging the safety gear. Observe that the pulling force generated by the overspeed governor may possibly be direction-dependent.
- the lift the car has to be braked with low speed. It is to be checked whether both brake arms are swinging into their operating position.

To check the braking force the safety gear can be tripped at rated speed or overspeed.

Upon pulling-out of the braked position the brake arm swings automatically back into its neutral position.

WARNING

The safety gear may be operated only in combination with an overspeed governor.

7.2 Check after braking

After every braking the safety gear has to be checked by a qualified person.

There is to be checked visually whether any changes or dirtying at the braking elements has occurred.

The following points are to be rechecked:

- excessive wear of the brake shoes
- deformations
- smooth running

The rubbed-off particles have to be removed and the braking marks have to be grinded down.

Braking again on a re-grinded braking track is not causing an essential change of the braking force.

DANGER

For guide rail lubrication only oil products approved in the type examination certificate shall be used.

Use machine oil of viscosity class ISO 68-150 without extreme pressure additive. See mineral oils without additive (for example lubricant C according to DIN 51517, Part 1.)
Oils for hydraulic aggregates, gears and motors are not suitable for this use.

8. Maintenance

Upon maintenance the safety gear shall be checked for:

- smooth operation
- synchronous operation of the two units
- wear
- rust
- dirt
- sealing

If, after a couple of braking tests, the braking rollers or the safety gear base show signs of wear they are to be replaced by qualified persons.

In case of replacing the brake shoe also the mounting screw has to be replaced.

Material no.:

	**Packing unit change of brake shoe** consisting of 1x brake shoe for screw 1x cylinder head screw	**50.100.352**

9. Transport

Any work upon transport, storage, installation and commissioning as well as (if any) demounting and disposal of a safety gear is to be carried out by qualified persons only.

They shall be responsible for proper assembly, transport and installation, and for putting the safety gear into operational condition. If this is not ensured, the manufacturer shall not be held liable for any damages that might occur.

Upon transport the safety gear must be protected against:

- humidity
- shock
- dirt
- falling-down, etc.

10. Annexe

- Order form for safety gear type BF66-2

SLC
Sautter Lift Components

Inquiry /
Order form BF66-2

SLS
Sassi Lift Systems

☐ **INQUIRY**

☐ **ORDER**

SLS Sassi Lift Systems
5 Blackwell Drive
Springwood Industrial Estate
Braintree, Essex CM7 20J, UK
Tel: 01376 550666
Fax: 01376 341219
Email: **sales@sls-ltd.co.uk**

Order no.:

Customer: _____

_____

Delivery address: _____

_____

_____

Cust. order no: _____ **Processor:** _____

Serial no.: _____ **Date:** _____

Comm. no.: _____ **Required date:** _____

PROGRESSIVE SAFETY GEAR BF66-2

Quantity:

1. Technical Data

Payload Q	_____	kg
Rated speed v:	_____	m/s
Car weight P:	_____	kg (incl. cabin weight)
Tiller rope weight U:	_____	kg
Mass counterweight GG:	_____	kg
Rail machined:	$(P+Q+U)_{max}$ = 3280 kg	
Rail drawn:	$(P+Q+U)_{max}$ = 2730 kg	
	v_{max} = 1.6 m/s	

Width of rail head: ☐ 9mm ☐ 10mm ☐ 12mm ☐ 14mm ☐ 15mm ☐ 16mm

Manufacture of rail: ☐ machined ☐ drawn

Surface of rail: ☐ dry ☐ oiled

2. Accessories

☐ with roller switch (with locking)
☐ with roller switch (without locking)
☐ without roller switch
☐ packing unit accessories tube, rope 6.5 mm
☐ packing unit accessories tube, rope 8.0 mm